



Short-term and medium-term rentals in the City of Toronto

Market and regulatory analysis

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October 2023



A report prepared by researchers from
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Executive summary



This report analyzes short-term rentals (STRs) and medium-term rentals (MTRs) in the City of Toronto. It provides a market overview of STRs and MTRs in Toronto, and measures their impact on the city's housing market. It assesses the impact of the City's STR regulations on the STR market, and assesses compliance rates among STR operators. And it provides an analysis of STR units that have returned to the longer-term rental market.

THE STR MARKET IN TORONTO

- In May 2023 there was an average of 3,810 STR listings active each day in housing units in Toronto on Airbnb and Vrbo. STR hosts in Toronto earned \$175.1 million in 2022.
- Following a sharp decline in STR activity from the Covid pandemic and the introduction of the City's STR regulations in 2021, the STR market has returned to growth, and there are now roughly the same number of active STR and MTR listings in Toronto.
- Compared to 2019, there is less revenue concentration among top STR hosts in Toronto,

suggesting a shift towards home sharing and away from commercial operations. However distribution of host revenue suggests commercial operation of STR listings is still occurring in Toronto despite the City's regulations.

THE MTR MARKET IN TORONTO

- Medium-term rentals can be found on STR platforms (Airbnb and Vrbo), LTR platforms (Craigslist, Kijiji, Rentals.ca) and a large number of small, dedicated MTR platforms.
- MTRs account for a majority of displayed listings on Airbnb and Vrbo, but only a small share of reservations and revenue.

- We estimate there are between 18,600 and 21,700 MTRs active in Toronto across all platforms.
- Evidence from Craigslist and Kijiji suggests that MTRs have been growing rapidly as a share of the total rental landscape since mid-2022.

STR AND MTR HOUSING MARKET IMPACTS

- In May 2023 there were 3,810 housing units operating as dedicated STRs or MTRs—only 54.5% of Toronto’s peak STR and MTR housing loss of 6,990 units prior the pandemic.
- Over the last year STR and MTR housing loss grew much more slowly (9.2%) than active daily STR and MTR listings (41.3%).
- If STR and MTR housing loss had continued on pre- pandemic and pre-regulation trends, there would be 8,910 dedicated STRs and MTRs rather than 3,810.
- Toronto’s STR regulations are likely responsible for between 3,320 and 5,100 housing units being returned to the long-term market.

STR REGULATORY COMPLIANCE

- Two and a half years since the introduction of the City’s STR regulations, most displayed Airbnb listings are MTRs (77.3%) and thus exempt from registration requirements.
- 22.1% of Airbnb listings have valid registration numbers, 0.3% claim an exemption, and 0.3% are STR listings with an expired or fake registration number.
- The prevalence of fake licenses has declined sharply: in February 2021, 2.6% of STR listings

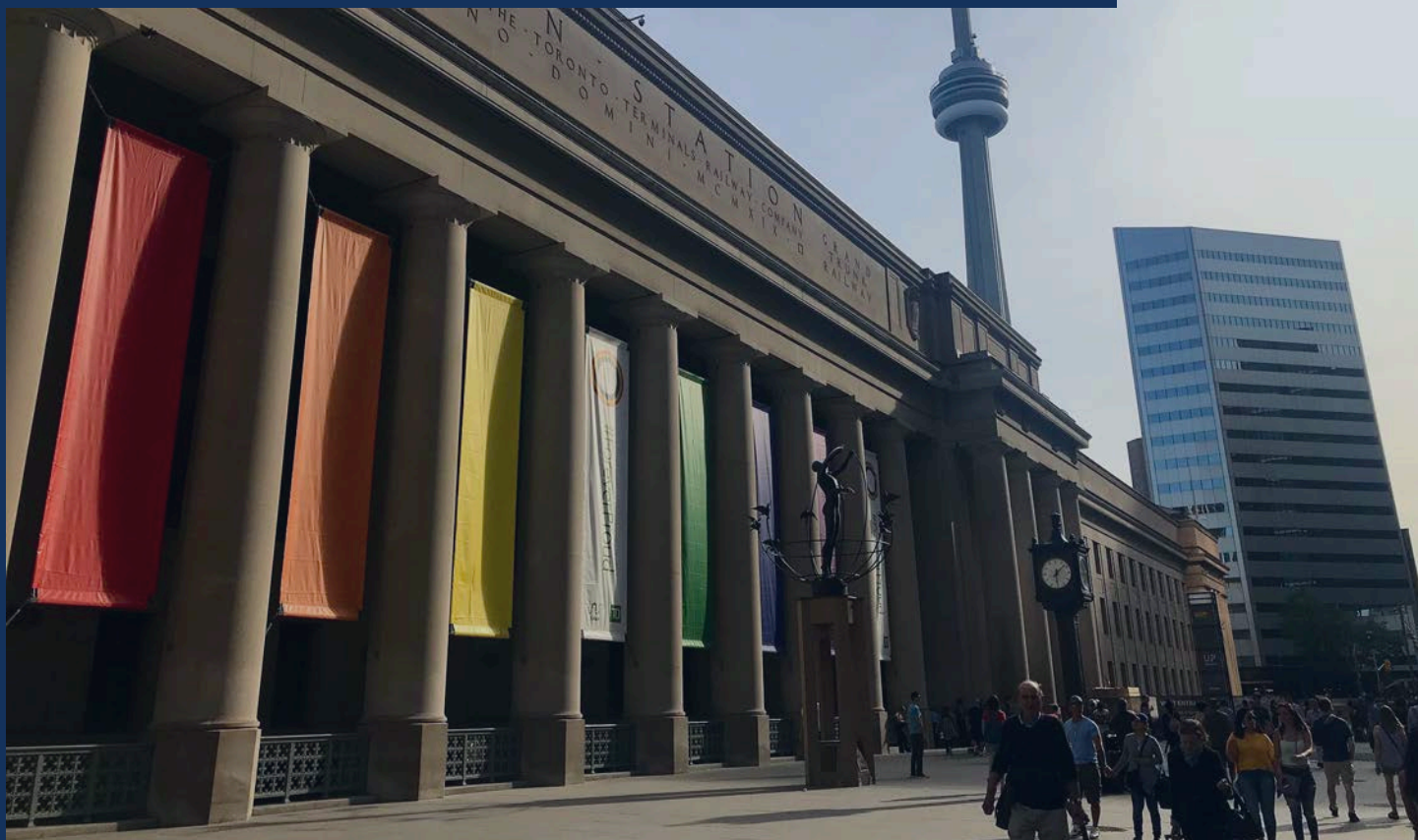
had a fake license number, compared to 0.3% in July 2023.

- Of STR listings with valid registration numbers, 16.0% are at high risk of violating the City’s STR rules, most often because they are likely not operated out of their host’s principal residence.

MOVEMENT BETWEEN SHORT-, MEDIUM-, AND LONG-TERM MARKETS

- Using image recognition, we identified 5,068 unique Airbnb listings which matched with 10,430 different MTR or LTR listings from April 2020 through December 2022.
- Nearly half (42.1%) of STR listings moving to LTR platforms were located in the Spadina-Fort York ward.
- STRs moving to the MTR and LTR markets from April 2020 through January 2021 were correlated with a significant decline in asking rents: asking rents for MTR/LTR listings matched to STR listings were 10.1% higher than non-matched listings, but city-wide rents declined 11.2% in the same time period.
- By contrast, in the period of time since STRs stopped returning to the long-term market, asking rents rose 41.0%—from \$1,890 in early February 2021 to \$2,664 in mid December 2022.
- For STR listings reposted on LTR platforms prior to February 2021, positive financial performance predicted a switch from STR to MTR or LTR markets. But for listings reposted on LTR platforms since then, negative financial performance predicts a switch from STR to MTR or LTR markets.

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1. Short-term and medium-term rentals in Toronto

INTRODUCTION

In summer 2023, the Urban Politics and Governance research group (UPGo) at McGill University undertook an independent research project to understand the evolution of short-term rental (STR) and medium-term rental (MTR) markets in the City of Toronto in the wake of the Covid pandemic and the introduction of the City's STR regulations in January 2021. Specifically, this report will shed light on the following topics:

1. A general market overview of STRs in Toronto, including the volume, revenue, and distribution of units, the presence of dedicated commercial operations, and the impact of Covid-19 and the City's STR regulations on STR activity.
2. A general market overview of MTRs in Toronto, including broad estimates of the overall size of

the MTR market and trends in MTR listings on STR and long-term rental platforms.

3. The impact of STRs and MTRs on Toronto's housing supply, and the extent to which the City's STR regulations have succeeded in returning homes to the long-term market.
4. The compliance of STR hosts with the City's STR regulations.
5. The movement of properties between the short-, medium-, and long-term rental markets, both in the wake of the Covid pandemic and the introduction of the City's STR regulations, and over subsequent years.

Data and methodology are discussed in the Appendix, and all the code used to generate the analysis in the report is available online at <https://github.com/UPGo-McGill/toronto-report-2023>.

THE CURRENT REGULATORY FRAMEWORK FOR SHORT-TERM AND MEDIUM-TERM RENTALS IN THE CITY OF TORONTO

Following a 2017 amendment to the City of Toronto's zoning bylaw (no. 569-2013), short-term rentals were introduced as a permitted use, with conditions, in Residential and Commercial-Residential Zones. Section 800.50 (763) of the City's zoning bylaw defines a short-term rental as "all or part of a dwelling unit that: (A) is used to provide sleeping accommodations for any rental period that is less than 28 consecutive days; and (B) is the principal residence of the short-term rental operator."

The specific conditions under which STRs are a permitted land use are set out in the short-term rental bylaw (no.1453-2017), and are discussed below. Whether the STR is located in a strictly

Residential Zone, or a Commercial-Residential Zone, the same conditions of the STR bylaw apply. For an STR to be operated legally it must be registered with the city, and any advertisement and records kept of the rental property must display the unique registration number.

Under Toronto bylaws, STRs in are only permitted within the operator's principal residence. Therefore, any residence a rental operator is not ordinarily living in, such as a vacation home, investment property, or accessory dwelling unit, is not permitted to be rented on a short-term basis (fewer than 28-consecutive days). These secondary properties can only be rented as medium- or long-term rentals. According to the City, a resident can



only have a single principal residence, which means a host is only permitted to operate a single property as an STR in Toronto.

The maximum number of nights per year an entire dwelling can be rented as a short-term rental is 180-nights. However, it is permitted under the bylaw to rent up to three bedrooms within your dwelling on a short-term basis for an unlimited number of nights per year.

Homeowners and tenants alike are able to host short-term rentals, as long as the unit is their principal residence, although for renters the ability to operate an STR is further dependent on the lease agreement with the landlord. Multiple individuals who live in the same home or dwelling may each register that home as a STR; however, collectively the entire home still may not be rented for more than 180-nights per year with short-term stays. All dwellings types, including laneway suites and secondary suites are permitted to be operated as STRs only by the principal residents of the suites. This means that the resident of a dwelling which has an accessory dwelling unit on its property is *not* permitted to offer that accessory dwelling unit as an STR.

All STRs in Toronto are required to pay Municipal Accommodation Tax, and if the host earns more than \$30,000 in revenue from the STR, they must additionally collect and remit HST.

Failing to adhere to the provisions set by the City's STR rules may lead to fines, the revocation of an operator's license, or the denial of a new license or license renewal. Some examples of offences

include: failing to register a STR; advertising, facilitating or brokering an unregistered STR; failing to remove an unregistered STR; renting or advertising property that is not a principal residence; advertising a STR without a registration number; and renting an entire unit for more than 180 days. If an STR operator's registration has been revoked, or they have been denied approval of a STR registration, they must wait a full year before reapplying.

Unlike short-term rentals, medium-term rentals have no official definition in City policy, but in practical usage the term implies a rental which is neither an STR nor a traditional, indefinite-length long-term rental. The fact that the City's zoning bylaw defines STRs as rentals of fewer than 28 days suggests, by contrast, that MTRs could be defined as rentals which are at least 28 days long. But beyond this fact, there is no basis in either municipal or provincial policy in Toronto for distinguishing a medium-term rental from other types of residential rental agreements. In particular, the Ontario Residential Tenancies Act does not make any reference to minimum or maximum rental periods in its definition of a residential tenancy in Ontario. There is thus likely considerable ambiguity concerning the conditions under which the Province would apply the Residential Tenancies Act to a medium-term rental.

In the following analysis, we define MTRs loosely as rental agreements for periods of time of at least 28 days but less than one year, which could occur either in the landlord's principal residence or in a dedicated MTR dwelling unit.

2. The STR market in Toronto



In May 2023 there was an average of 3,810 STR listings active each day in housing units in Toronto on Airbnb and Vrbo. STR hosts in Toronto earned \$175.1 million in 2022. Following a sharp decline in STR activity from the Covid pandemic and the introduction of the City's STR regulations in 2021, the STR market has returned to strong growth, and there are now roughly the same number of active STR and medium-term rental listings in Toronto. STR activity is heavily concentrated in the Spadina-Fort York, University-Rosedale, and Toronto Centre wards. Compared to 2019, there is less revenue concentration among top STR hosts in Toronto, suggesting a shift towards home sharing and away from commercial operations. However distribution of host revenue suggests commercial operation of STR listings is still occurring in Toronto despite the new regulations. 33.8% of active listings in May 2023 were operated by hosts with other simultaneously active listings.

ACTIVE LISTINGS AND HOST REVENUE

In the City of Toronto, short-term rentals (STRs) are defined as rentals offered for a period of fewer than 28 days, and they are only legal in a host’s principal residence. In May 2023 there was an average of 3,810 STR listings active each day in housing units in Toronto on Airbnb and Vrbo, operated by 4,080 separate hosts (Figure 1).¹

There was also a further 2,150 listings which were visible on these two platforms but were blocked by the hosts from receiving reservations. STR hosts in Toronto collectively earned \$175.1 million in 2022—an average of \$29,300 per active host.

In 2019—prior to both the Covid pandemic and the introduction of the City’s STR rules—there were

an average of 11,190 active STR listings in Toronto, which collectively earned \$332.8 million. In 2020, these numbers fell to 8,130 and \$135.4 million respectively, and then collapsed further to 2,430 and \$67.2 million in 2021, as commercial STRs were banned in Toronto.

Figure 1 demonstrates the steep decline in STR activity throughout 2020 and then the additional collapse in active (and especially displayed) STR listings at the beginning of 2021. The figure also demonstrates the sharp jump in displayed medium-term rental (MTR) listings—those with minimum stays of at least 28 days—on Airbnb and Vrbo in January of 2021. As our previous

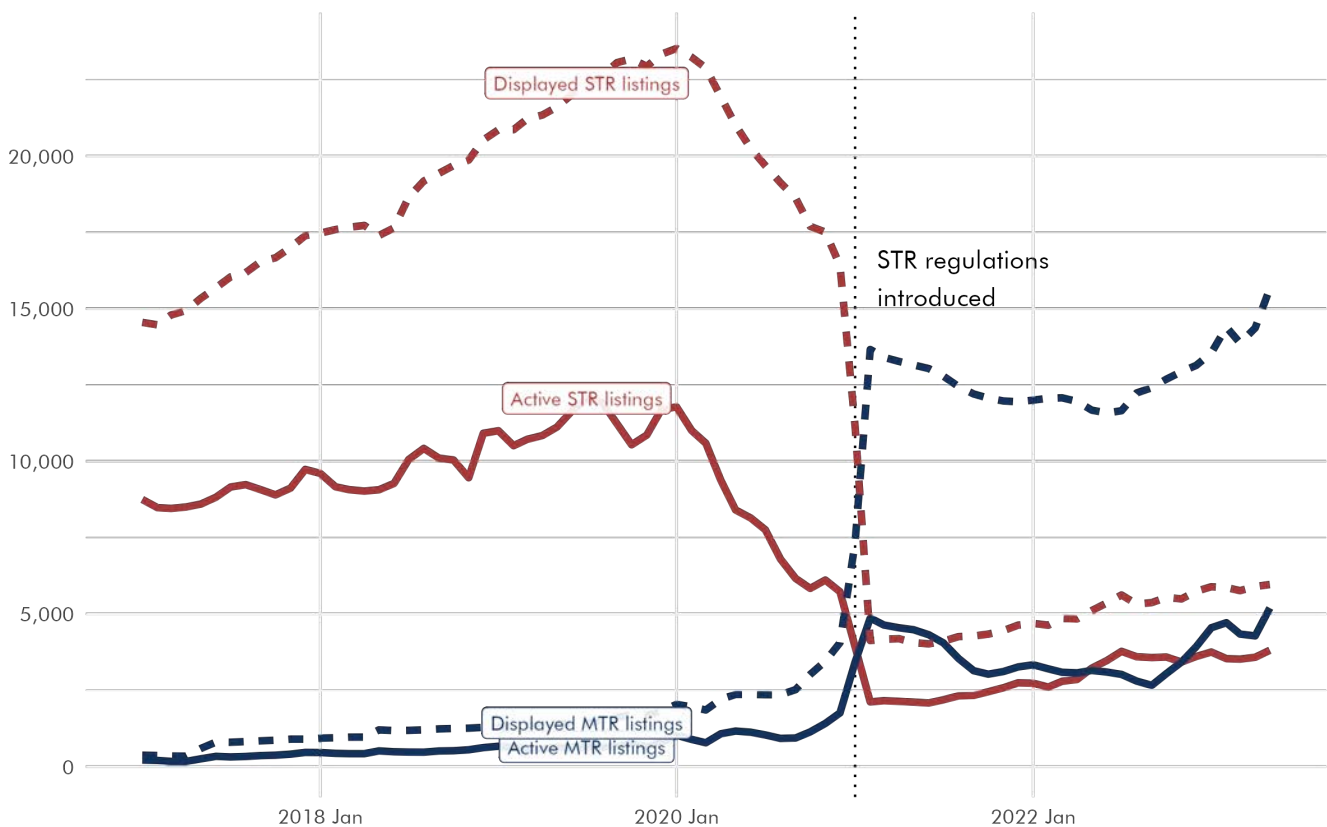


Figure 1. Active and displayed STR and MTR listings in the City of Toronto

¹ Active daily listings are listings which were displayed on Airbnb or Vrbo on a given day, and were either reserved or available for a reservation. They are the most reliable means of determining the overall size of the STR market in a location, particularly with respect to change over time. These and all subsequent figures exclude hotel rooms and other non-housing accommodations which are advertised on Airbnb or Vrbo.

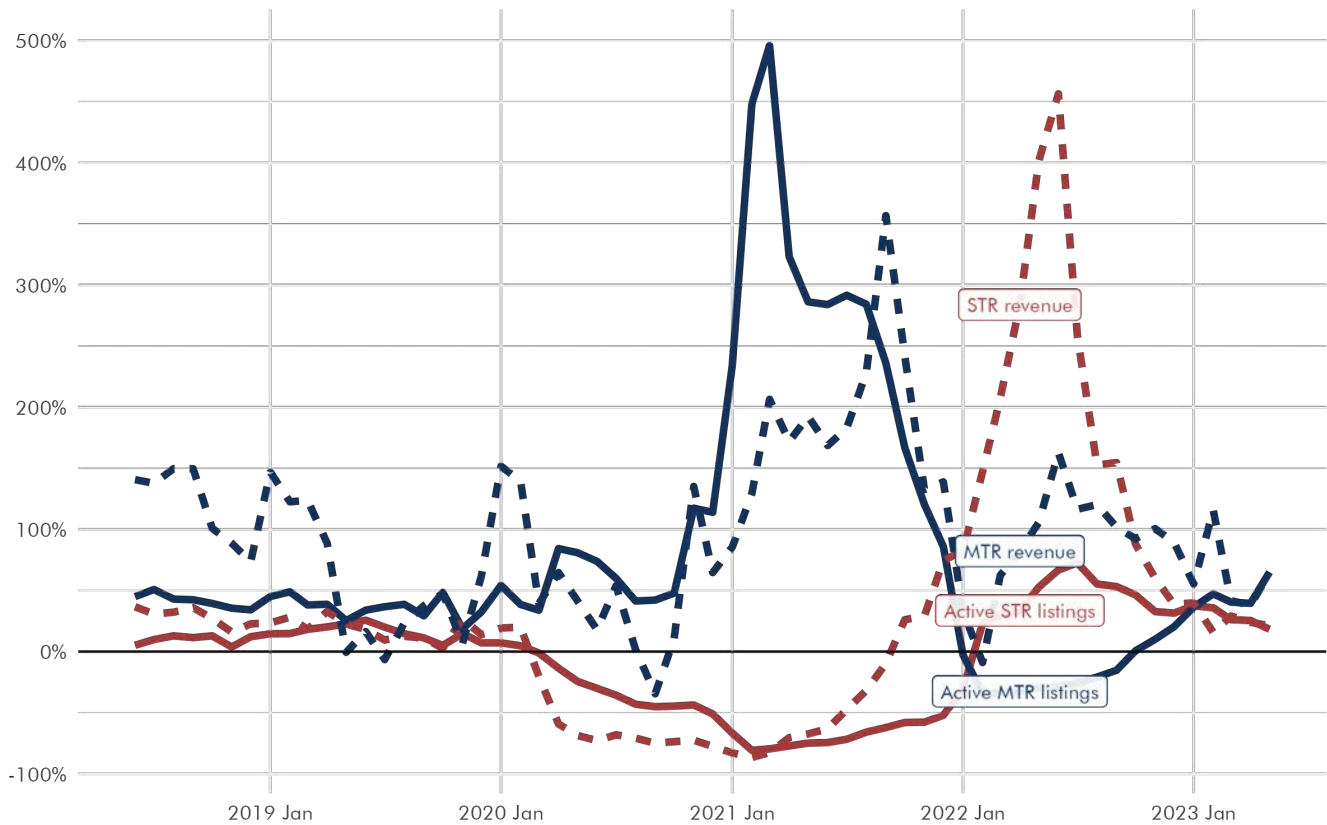


Figure 2. Year-over-year growth in STR and MTR listings and revenue in the City of Toronto

analysis revealed (Wachsmuth et al. 2021), in early January 2021 Airbnb took 8,400 Toronto STR listings on its platform which had failed to register with the City of Toronto and converted them to 28-day minimum stays in order to avoid the need to remove these listings for non-compliance with the City’s rules.

Through 2021 these newly converted MTR listings significantly outnumbered actual STR listings. But as of 2023 there are roughly the same number of active STR and MTR listings in Toronto, even though the latter continue to dwarf the former in terms of total displayed listings. At the same time, STR listings account for the vast majority of host revenue on Airbnb and Vrbo: in May 2023 STRs earned \$17.9 million and MTRs earned \$8.0 million.

STR listing and revenue growth both turned sharply negative with the onset of the Covid

pandemic in 2020 and remained negative through 2021 thanks to the introduction of the City’s STR regulations. But as of 2022, STR listings and revenue have been growing rapidly (Figure 2). Both of these indicators signal a strong recovery underway in Toronto’s STR market, and suggest that the market is on a trajectory to return to its pre-pandemic and pre-regulation levels in the future, despite the fact that the City’s regulations have banned commercial short-term rentals.

STR activity in Toronto is highly concentrated in the Spadina-Fort York, University-Rosedale, and Toronto Centre wards (Table 1). These three areas accounted for two fifths of all active listings in May 2023. Spadina-Fort York has by far the most STR activity when measured in per-capita terms: one out of every 100 dwelling units in this ward was an active STR in May 2023 (Figure 3).

Ward	Daily active STR listings (May 2023)	Active listing growth (May 2022-2023)	Active listings as % of dwellings (May 2023)	Monthly revenue (May 2023)	Revenue growth (May 2022-2023)
City of Toronto	3,810	18.2%	0.3%	\$17,860k	21.1%
Spadina-Fort York	950	-2.2%	1.0%	\$6,370k	1.0%
Toronto Centre	310	40.7%	0.4%	\$1,730k	51.3%
University-Rosedale	290	5.5%	0.5%	\$1,640k	19.0%
Davenport	230	17.8%	0.5%	\$1,080k	43.4%
Willowdale	190	2.7%	0.3%	\$560k	-5.6%
Toronto-Danforth	160	0.3%	0.3%	\$780k	20.6%
Etobicoke-Lakeshore	160	73.6%	0.2%	\$720k	78.1%
Beaches-East York	160	89.4%	0.3%	\$700k	117.6%
Parkdale-High Park	130	4.2%	0.2%	\$660k	9.7%
Toronto-St. Paul's	120	35.5%	0.2%	\$590k	63.2%
Etobicoke Centre	100	70.4%	0.2%	\$320k	80.8%
Humber River-Black Creek	100	10.7%	0.2%	\$180k	54.0%
Scarborough Southwest	90	60.2%	0.2%	\$280k	99.6%
York Centre	90	64.4%	0.2%	\$240k	14.9%
Scarborough-Agincourt	80	38.6%	0.2%	\$160k	29.5%
Don Valley North	80	-3.1%	0.2%	\$190k	-22.6%
York South-Weston	80	29.2%	0.2%	\$300k	67.2%
Eglinton-Lawrence	80	50.1%	0.2%	\$300k	67.5%

Table 1. STR activity in wards with at least 80 daily active STR listings in May 2023

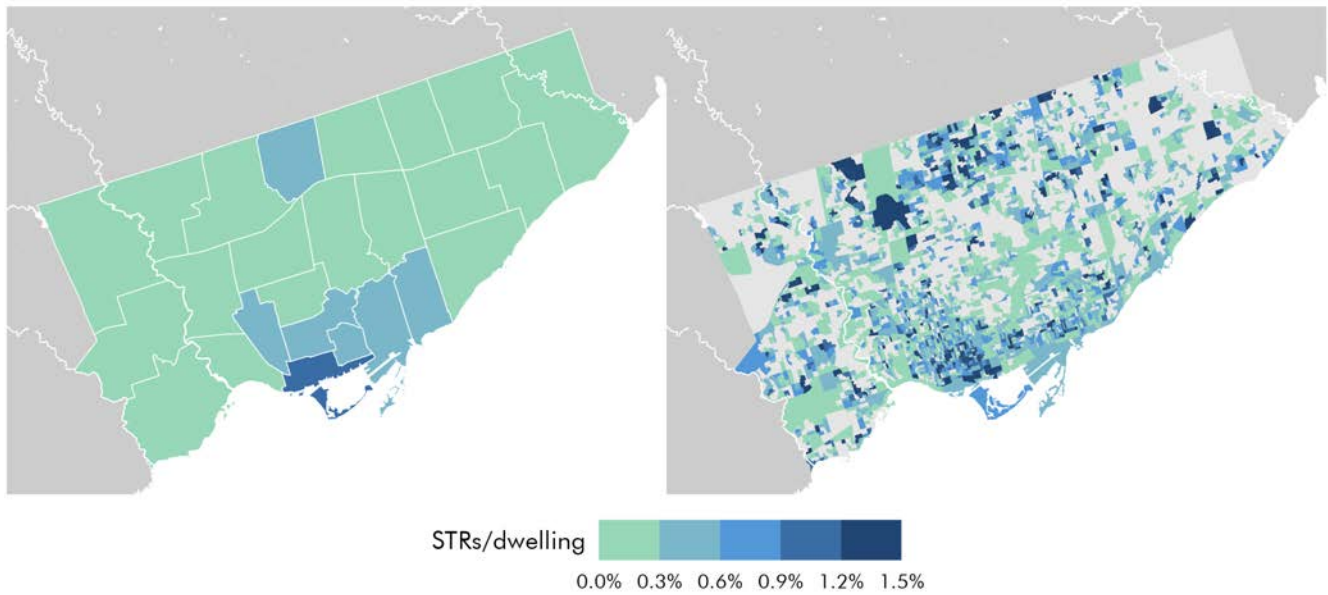


Figure 3. Active STRs as a share of all dwelling units, by ward (L) and dissemination area (R) (May 2023)

HOME SHARERS AND COMMERCIAL OPERATORS

An important distinction in STR markets is between “home sharing” and “commercial operations”. Home sharing occurs when the principal resident of a housing unit rents out part or all of that housing unit on a temporary basis. A family with a spare bedroom that they rent on Airbnb as a private-room listing is an example of home sharing, as is a condo unit whose occupant travels frequently for business, and rents out the entire unit when she is out of town. A commercial operation, by contrast, is an STR listing which is not located in the host’s principal residence, and is operated in a more or less full-time fashion. Unlike home sharing arrangements, commercial STRs remove housing units from the long-term market, since each housing unit which is being operated as a full-time STR could instead be housing a long-term resident.

Commercial STR operations are not allowed in the City of Toronto, since only principal-residence STRs are an permitted land use under the City’s zoning bylaw. However, it is possible that some STR

operators are falsely claiming that their commercial STRs are principle-residence operations.

One way to distinguish between commercial operators and home sharers is to examine the distribution of revenue among hosts. If revenue is concentrated among a small number of high earners, that suggests that most STR activity is conducted by commercial operators, regardless of how many hosts are active on the platform.

Among all the STR hosts who earned revenue in the City of Toronto in the first five months of 2023, the median revenue from January-May was \$7,910. Throughout the City of Toronto, there were 21 STR hosts that earned more than \$100,000 in the first five months of 2023. It is difficult to square this amount of revenue with operating principal residence STRs. Despite the overall substantial increase in host revenue between 2022 and 2023, however, these 21 hosts actually represent a significant decline from 2022, when there were 41 hosts earning more

than \$100,000 in the first five months of the year. (For reference, in 2019—prior to the pandemic or the City’s STR bylaw—the equivalent figure was 89.)

Figure 4 shows the percentage of the total \$57.9 million in revenue which Toronto STR hosts earned in the first five months of 2023 which accrued to each decile of hosts. It also shows the equivalent distribution for the first five months of 2019 (a pre-pandemic, pre-regulation baseline). The figure shows that revenue is disproportionately concentrated among a small number of hosts, but that there is less revenue concentration in 2023 than there was in 2019.

In 2019, the top 10% of hosts earned fully 51.0% of all host revenue, while the top 1% earned 17.6%. In 2023, these figures had declined to 37.6% and 9.6% respectively. To put this change in context, in 2019, Montreal’s top 10% of STR hosts earned 68.8% of all revenue, while Vancouver’s top 10% hosts only earned 43.2%. Montreal had no meaningful STR regulations in 2019, while Vancouver did. Toronto’s host revenue distribution

has thus shifted from one which is comparable to the country’s largest un-regulated STR market (Montreal) to one which is comparable to the country’s second largest regulated STR market (Vancouver).

Finally, one simple method of identifying commercial STR operators is to identify listings operated by hosts who have multiple listings in operation simultaneously. These “multilistings” by definition cannot be home sharing arrangements, since the host cannot have multiple principal residences. We consider entire-homes to be “multilistings” if they are operated by hosts who are simultaneously operating other entire-home listings in the City of Toronto. We define private-room multilistings as cases where a host has three or more private-room listings operating on the same day in the City of Toronto. Since nearly all entire-home listings have three or fewer bedrooms, there will be extremely few cases where a host operating three private-room STR listings in a dwelling unit has not converted the entire unit into a dedicated STR.

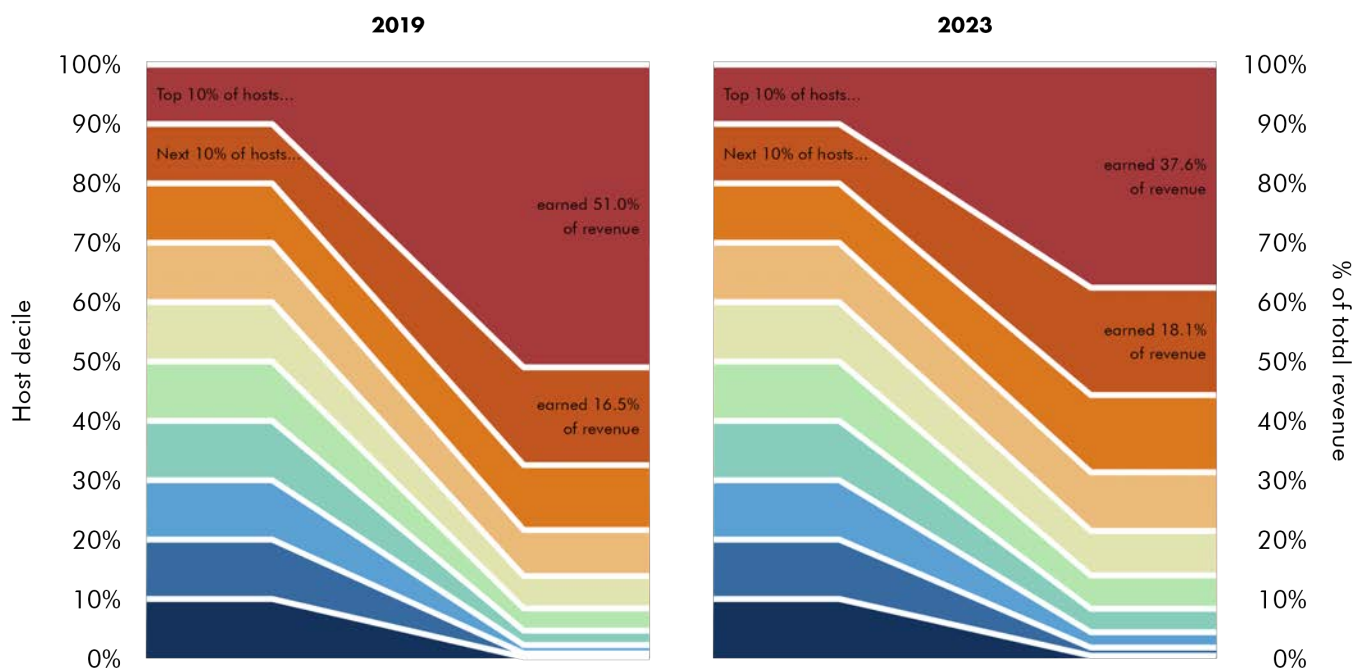


Figure 4. STR host revenue distribution in the City of Toronto in 2019 (L) and 2020 (R)



Figure 5. The percentage of active listings and revenue accounted for by multilistings in Toronto

In May 2023, 33.8% of active listings in Toronto were multilistings, earning 25.0% of total host revenue. Figure 5 shows the share of all active listings which are multilistings over time. Multilistings were growing steadily—both in terms of listings and revenue percentage—from 2017 until the introduction of the City’s STR regulations in January 2021. Multilistings then declined in proportional terms over the course of 2021, before dropping precipitously through 2022—particularly with respect to STR host revenue, where multilistings’ share fell by half from its 2020 peak of nearly 60% to a May 2023 low of 25%.

One important limitation of these multilisting figures is that they are calculated on the basis of the host identified on Airbnb or Vrbo. Property management companies which manage portfolios of properties on behalf of their owners would thus be counted as multilistings even though, in reality,

their listings might be individually owned. Still, we believe these multilisting figures should be taken as conservative estimates of commercial STR activity in Toronto, for several reasons. First, our definition of multilistings only considers situations where multiple listings are operating simultaneously in the City of Toronto. But there could be cases where a host has a listing in Toronto and another in Mississauga. Second, many commercial operators will use different Airbnb or Vrbo accounts to manage their listings, and their listings will not be counted as multilistings. Finally, many STR commercial operators only operate a single listing, but operate it on a full-time basis. A house owner with a secondary suite, or the owner of an investment condo who operates a STR in it, are clearly commercial operators running listings which are not their principal residences, but they would not be counted by this method.

3. The MTR market in Toronto



Medium-term rentals can be found on STR platforms (Airbnb and Vrbo), LTR platforms (Craigslist, Kijiji, Rentals.ca) and a large number of small, dedicated MTR platforms. MTRs account for a majority of displayed listings on Airbnb and Vrbo, but only a small share of reservations and revenue. We estimate there are between 18,600 and 21,700 MTRs active in Toronto across all platforms. Evidence from Craigslist and Kijiji suggests that MTRs have been growing rapidly as a share of the total rental landscape since mid-2022. On STR and LTR platforms, MTRs consistently command lower rents than either STRs or LTRs, which conflicts with anecdotal evidence that dedicated MTR platforms offer their listings at a premium relative to long-term rentals.

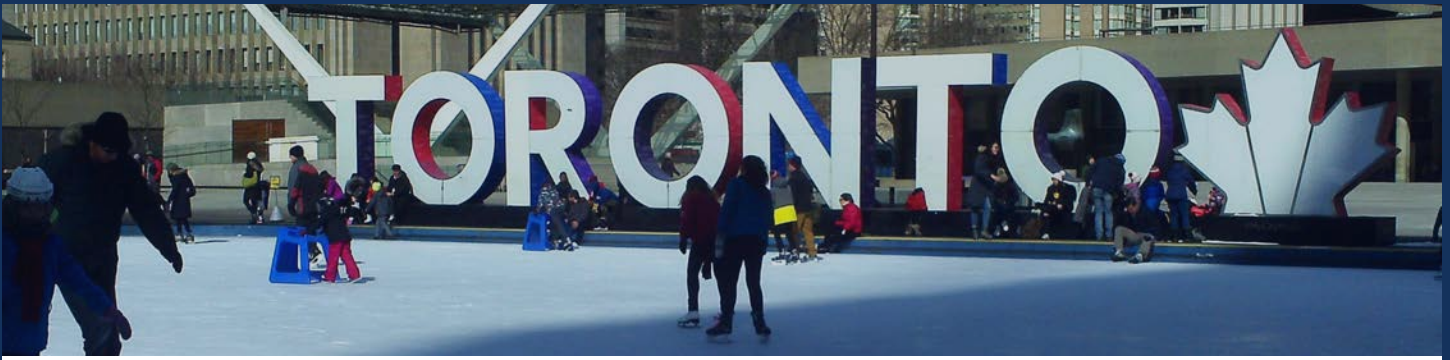
THE SCOPE OF MEDIUM-TERM RENTALS IN TORONTO

The City of Toronto has defined short-term rentals as “all or part of a dwelling unit rented out for less than 28-consecutive days in exchange for payment”. This definition includes bed and breakfasts but excludes hotels and motels. Medium-term rentals, on the other hand, do not have a formal definition but can be understood as rentals which do not have a standard 12-month lease but which last at least 28 days.

There is no comprehensive source of information as to the number and location of MTRs in Toronto, but broadly speaking there are three types of platforms that offer these rentals. First, there are the STR platforms (primarily Airbnb), all of which allow bookings of 28 days or more which are

mediated through their reservation and payment infrastructure. It is possible or even common in these cases for a guest or tenant to have little or no direct contact with the landlord. We have comprehensive data about MTR listings and activity on Airbnb and Vrbo in Toronto.

Second, there are the established long-term rental platforms, many of which advertise monthly rentals. Facebook Marketplace, which is likely the largest current source of long-term rental ads in Toronto, does not advertise monthly rentals, but Craigslist and Kijiji both do. We have several years of data about MTR advertisements (but not subsequent activity) on Craigslist and Kijiji in Toronto.



Third, there are dedicated MTR sites. There is no comprehensive list of these sites, but our scan revealed at least twenty operating in Toronto. The audience these sites advertise their services to are typically, but not limited to: corporate or executive rental housing, insurance housing, medical stays, employee relocation, stays for film crews or entertainment workers, new immigrants, military, international students, young professionals, and people between homes. Although these sites often list daily rates, most of their rentals are only available at a 30-night minimum. Like a hotel stay, and unlike a long-term lease, many sites advertise they do not require credit checks, which can be helpful for new immigrants who need to build up credit in a new country. We only have point-in-time data on MTR advertisements on these sites.

Unlike listings on STR platforms such as Airbnb, dedicated MTR sites do not typically advertise their listings as tourist accommodations, although leisure stays may certainly occur. Unit types are most often one- or two-bedroom apartments, with some sites offering studio rentals, three and four bedroom apartments, as well as occasional listings of single-family homes. These rentals are frequently located in downtown Toronto; however, there is a range of locations offered across the city and into the greater Toronto area. Throughout the online searches, it was common to see the same buildings advertised across multiple sites, particularly in downtown Toronto.

While some corporate rental sites also advertise to international students, we were unable to find

medium-term rental sites specifically geared to international students. By contrast, there are a number of homestay websites catering to international students, which may be considered a form of medium-term rental. However, homestays are not protected under the Residential Tenancies Act in Ontario if the student shares either a bathroom or the kitchen with the owner or members of the owner's family—an arrangement which appears to be common on homestay sites.

Medium-term rental sites are most commonly operated by property management companies who represent homeowners or investment real estate properties. The property management companies typically handle all aspects of the rental, from advertising and finding tenants, to furnishing and cleaning the suite, and collecting rents. Aside from a few sites where we could not determine whether the inventory of units was owned and operated by the company itself or if they were a third-party property management site, the vast majority of all medium-term rental sites are third-party property management companies. The sites we have encountered have a wide range of unit inventories, from fewer than ten units to more than 1,000.

Because these sites do not allow for detailed analysis of their rentals, we begin with an inspection of MTRs on Airbnb and Vrbo, where it is possible to obtain precise counts and trends, before concluding by roughly extrapolating data from Airbnb and Vrbo to the rest of the MTR market.

MEDIUM-TERM RENTALS ON AIRBNB AND VRBO

Figure 6 shows the percentage of listings and activity on Airbnb and Vrbo which is attributable to MTRs. The figure makes it clear that, prior to Airbnb’s forced conversion of 8,400 STR listings to minimum 28-night stays, MTRs were only responsible for a small fraction of activity on these platforms. The pandemic caused a small shift towards more MTRs, but throughout 2018 and 2019 MTRs accounted for an average of 6.0% of all daily displayed listings and only 2.1% of all host revenue.

In 2021, while the pandemic continued to depress demand for short-term accommodation and in the immediate aftermath of Airbnb’s conversion of most Toronto STRs to 28-day minimums, MTRs accounted for 72.0% of daily displayed listings and 34.4% of all host revenue.

These proportions dropped somewhat in 2022 and have been rebounding through 2023; in the first five months of 2023, MTRs accounted for 71.0% of daily displayed listings on Airbnb and Vrbo and 31.1% of host revenue, which are nearly as high as the 2021 levels.

Even as the MTR share of Airbnb and Vrbo activity has grown enormously since 2021, there has been a persistent gap between MTRs’ share of listings and their share of activity, reservations, and revenue. In other words, as Figure 6 demonstrates, compared to STRs listings, a disproportionately low share of MTR listings are actually active (i.e. open for reservations), a disproportionately low share of active MTR listings are actually receiving reservations, and MTR listings receiving

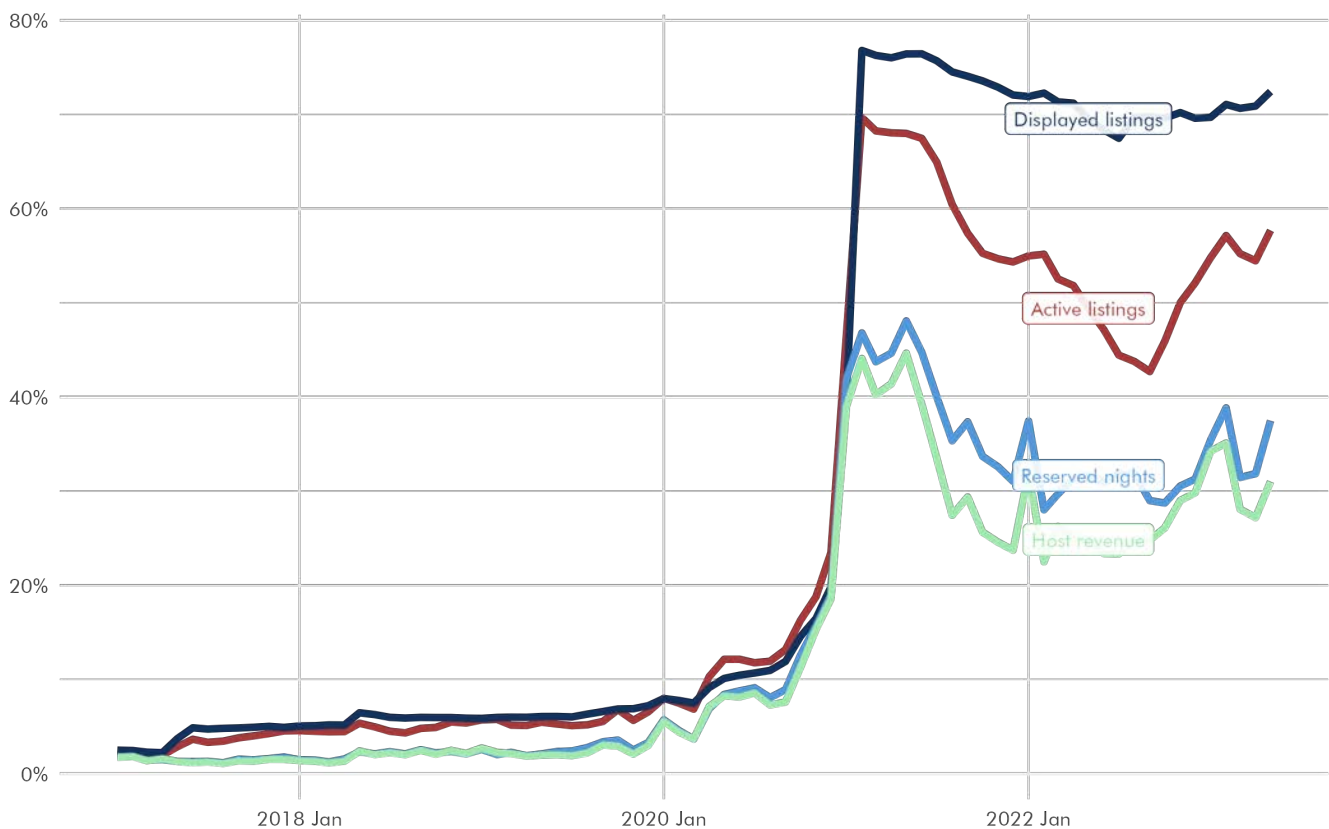


Figure 6. Medium-term rentals as a share of all listings on Airbnb and Vrbo in the City of Toronto

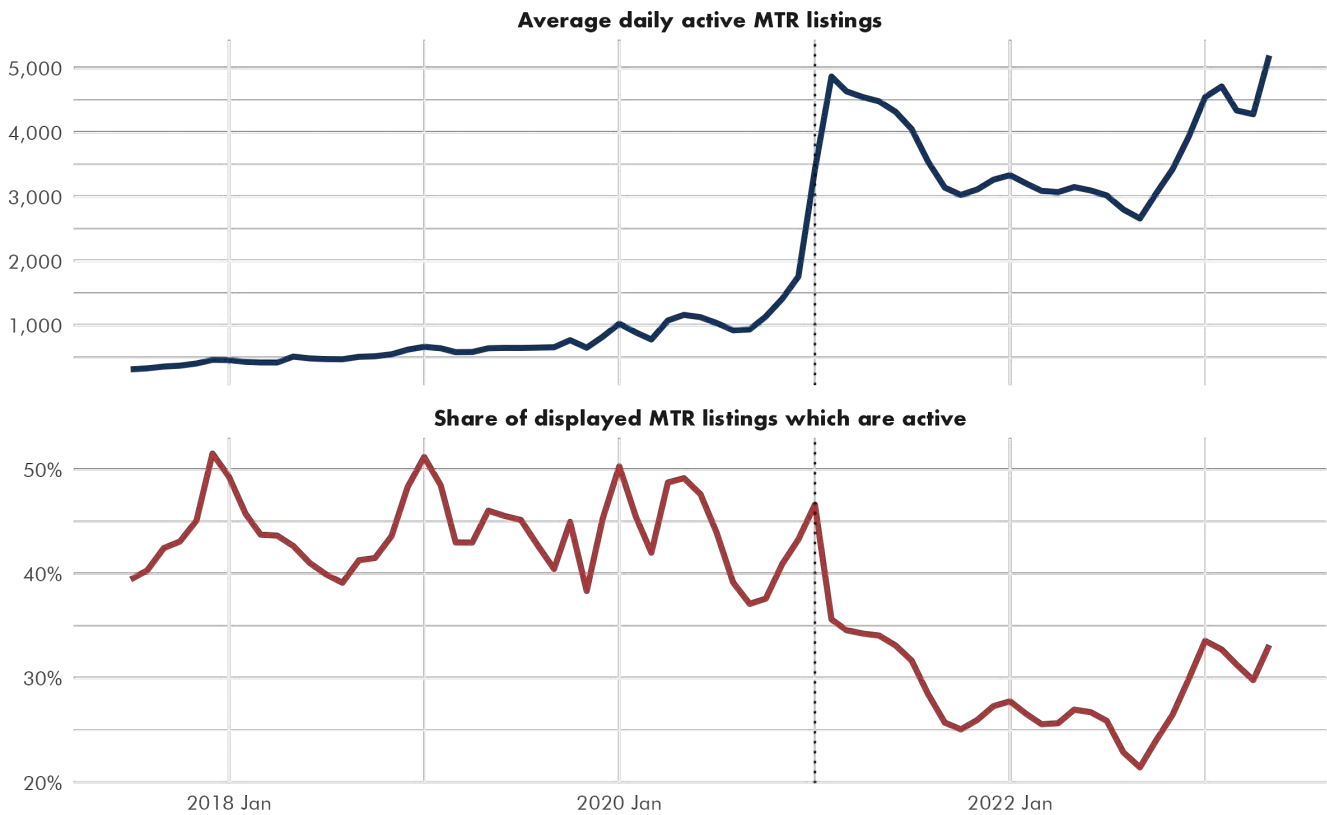


Figure 7. Active MTR listings (top) and share of displayed MTR listings which are active in the City of Toronto (monthly average)

reservations earn a disproportionately low amount of revenue.

Figure 7 offers another way to view this relationship. It shows the total number of active MTRs in Toronto in the top panel, and the percentage of all displayed MTRs which are active in the bottom panel. The figure demonstrates that the share of displayed MTR listings which were active was relatively stable between 40 and 50% prior to the mass movement of STR listings to 28-day minimums in January 2021. Since then, the share dropped as low as 21% in late 2022, before beginning to climb again. In other words, a very large share of the post-2020 nominal MTR supply on Airbnb and Vrbo are simply STRs which have effectively been deactivated. (For this reason, all subsequent analysis will focus only on MTRs which are actively available for rent.)

Figure 8 displays the spatial distribution of MTR listings in Toronto. The left panel shows the percentage of housing units which are operating as MTRs, while the right panel shows the percentage of total active listings on Airbnb and Vrbo which are MTRs. The distributions are relatively similar—i.e., neighbourhoods with high concentrations of MTRs are also neighbourhoods where a high share of the total volume of activity on Airbnb and Vrbo is MTRs as opposed to STRs. The exception is the Spadina-Fort York ward: downtown and on the waterfront, MTRs make up a relatively low share of total Airbnb/Vrbo activity despite being a large share of total housing. This is the neighbourhood, in other words, where traditional STR activity continues to be highly prevalent, in spite of the City’s regulations effectively banning commercial STRs.

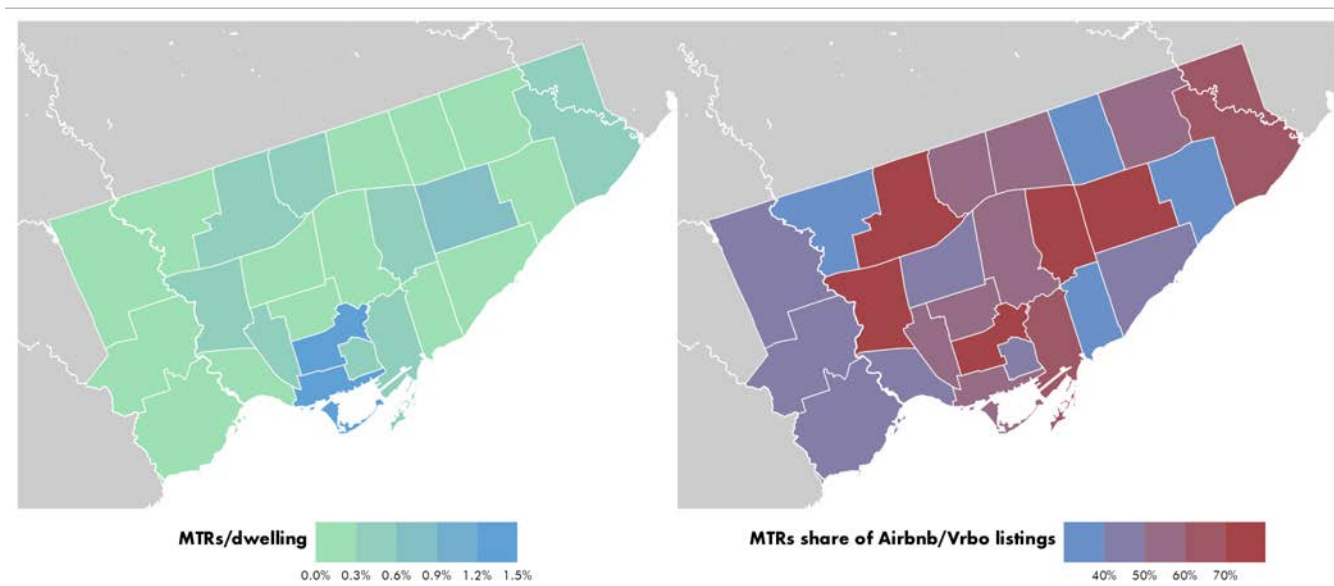


Figure 8. MTRs as a share of all dwellings (L) and all Airbnb/Vrbo listings (R), by ward (May 2023)

WHAT IS THE TOTAL VOLUME OF MTR ACTIVITY IN TORONTO?

As discussed above, it is not possible to obtain comprehensive or historical data on MTR activity on non STR-platforms. However, using point-in-time counts of listings available online, it is possible to assemble rough estimates of the total volume of MTR activity in Toronto.

Table 2 summarizes high-level information about available medium-term rentals in Toronto in summer 2023. In total, we identified 11,270 MTR listings available in summer 2023, spread across STR platforms (Airbnb and Vrbo), primarily LTR platforms (Kijiji, Craigslist, and Rentals.ca), and dedicated MTR sites. (The individual counts were done between May and July.) However these numbers are not directly comparable to each other, since some represent listings available for rent and other represent total inventory, whether or not it is available. Working from the dedicated MTR sites for which it was possible to see both numbers, we established an average vacancy rate of 11.3%, which is a plausible figure for the MTR market. (It is higher than the LTR vacancy rate in Toronto but lower than the STR vacancy rate.) We

then used this rate to standardize our observations, allowing us to estimate the stock of available and total MTR housing in Toronto. We further distinguish between a scenario where all listings on the main LTR platforms (Kijiji, Craigslist and Rentals.ca) are unique, and a scenario where half of the listings on the smaller two platforms are duplicates of listings on Kijiji). These two scenarios yield total estimates of 21,690 or 18,610 MTRs in Toronto, respectively.

To be clear, there is enough uncertainty that these numbers should only be taken as order-of-magnitude estimates. For example, it is possible that the MTR listings on Kijiji, Craigslist and Rentals.ca are more similar to traditional LTR listings than the corporate stays which dominate the dedicated MTR sites. If this is true, the vacancy rate for these MTRs might be substantially lower—and thus the total stock of MTRs substantially higher—than we estimated. Another possibility—albeit less likely—is that there are a significant number of additional MTRs on platforms that we did not identify in our scan.

Platform	Available MTR listings (summer 2023)	Total MTR listings (summer 2023)	Notes
Airbnb/Vrbo	3,690	5,190	Listings already de-duplicated
Kijiji	630	5,580	Count of "short-term" rentals
Craigslist	400	3,500	Count of "furnished" rentals
Rentals.ca	300	2,670	Count of "short-term" rentals
The Square	190	1,700	
Sabbatical Homes	80	200	
Rent It Furnished	80	1,060	
Toronto Furnished Rentals	40	310	
Toronto Luxury Suites	20	180	
Premier Suites	20	180	
Amber Student	0	110	
Toronto Boutique Apartments	0	70	
Other platforms	110	940	Some listings estimated from building counts
<i>Total</i>	<i>5,560</i>	<i>21,690</i>	
<i>Total (50% LTR duplicates)</i>	<i>5,210</i>	<i>18,610</i>	

Table 2. MTR platforms in Toronto (summer 2023; red text indicates estimated values)

ARE MTRS INCREASING IN TORONTO?

Analysis earlier in this chapter has already established that MTRs now account for a much larger share of activity on Airbnb and Vrbo than they used to, but this fact is primarily driven by the changing regulatory environment, and Airbnb's forced conversion of 8,400 STR listings to 28-day minimums. It is therefore not possible to extrapolate from trends on Airbnb to establish broader patterns about MTR activity in Toronto. However, we conducted weekly scrapes of rental ads on Craigslist and Kijiji between April 2020 and December 2022, covering both "long-term"

rentals (typically standard 12-month leases) and "short-term" rentals (typically monthly rentals, i.e. MTRs), and this data allows for the identification of longer-term trends in the MTR market in Toronto.

Figure 9 shows the proportion of Craigslist and Kijiji rental ads which were furnished (top panel) and the share of Kijiji rental ads which were "short-term" (bottom panel) each week from April 2020 through December 2022. The two panels have different magnitudes but show similar trends: after a period of slow decline from 2020 through

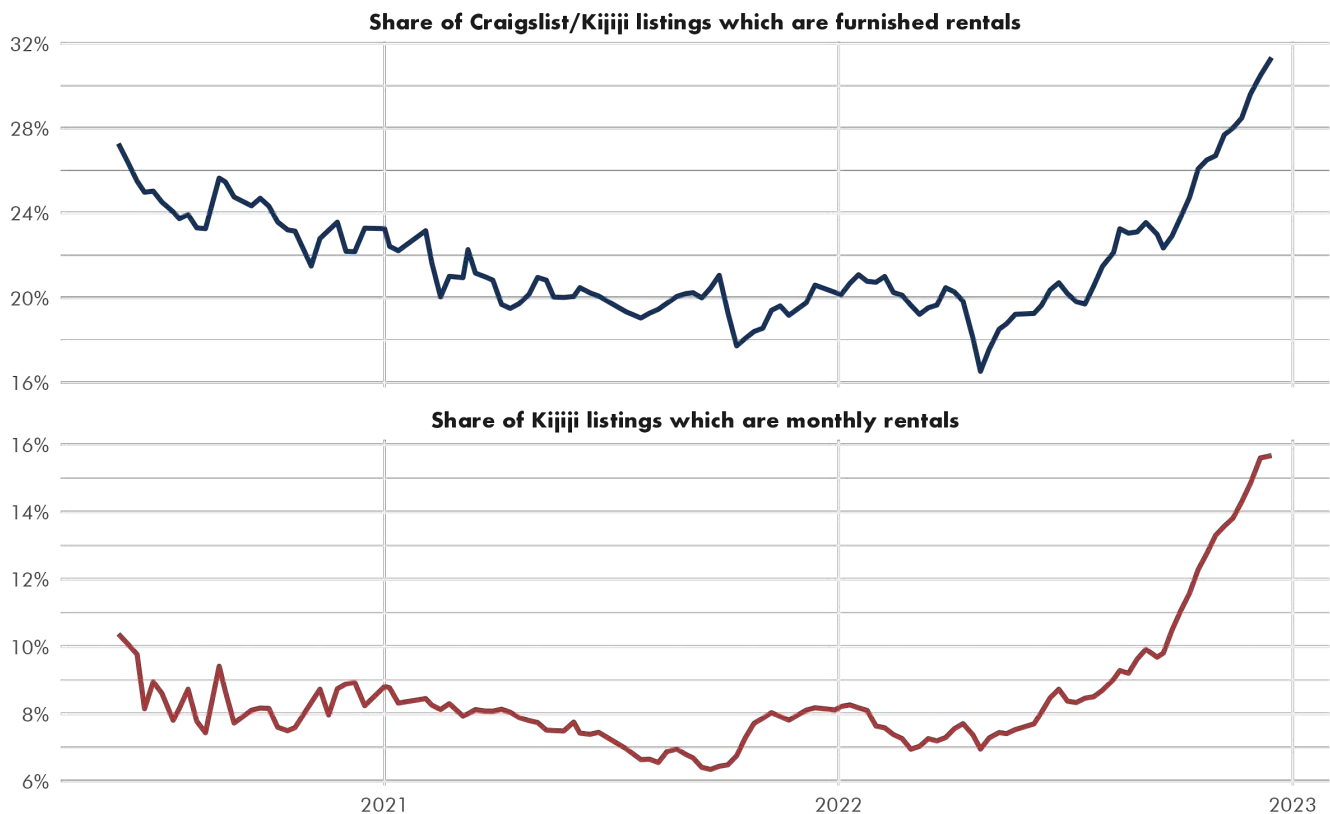


Figure 9. The share of Craigslist and Kijiji rental listings which are furnished (top) and the share Kijiji rental listings which are for “short-term” (i.e. monthly) rentals (bottom) in the City of Toronto (two-week moving average)

early 2022, the proportion of MTRs has been rising quickly. As of the end of 2022, more than 30% of rental ads on Craigslist and Kijiji were for furnished rentals, while nearly 16% of rental ads on Kijiji were for month-to-month MTRs.

Kijiji and Craigslist are just two rental platforms, so it is not possible to reach strong conclusions on the basis of trends on these platforms alone. However, in the absence of this data, a reasonable assumption would have been that MTR

listings would be shrinking on non-Airbnb platforms in 2022, as Airbnb’s MTR presence became more established. The fact that the opposite occurred—MTRs appear to be growing quickly on Craigslist and Kijiji—suggests that the broader MTR market in Toronto may also be growing. For example, in a post-pandemic housing market which has seen rental vacancy rates drop and rents increase quickly, medium-term rentals may be playing a larger than previous role in meeting housing needs.

HOW DO MTR RENTS COMPARE TO STR AND LTR RENTS?

Our scan of dedicated MTR sites suggests that they offer higher rents than LTR sites for comparable units. Considering examples in which units are in the same building, but are listed across multiple

platforms we can make a direct rent comparison. For instance, on *delsuites.com*, a site catering to medium-term, typically corporate rentals, a one-bedroom unit in downtown Toronto is listed at

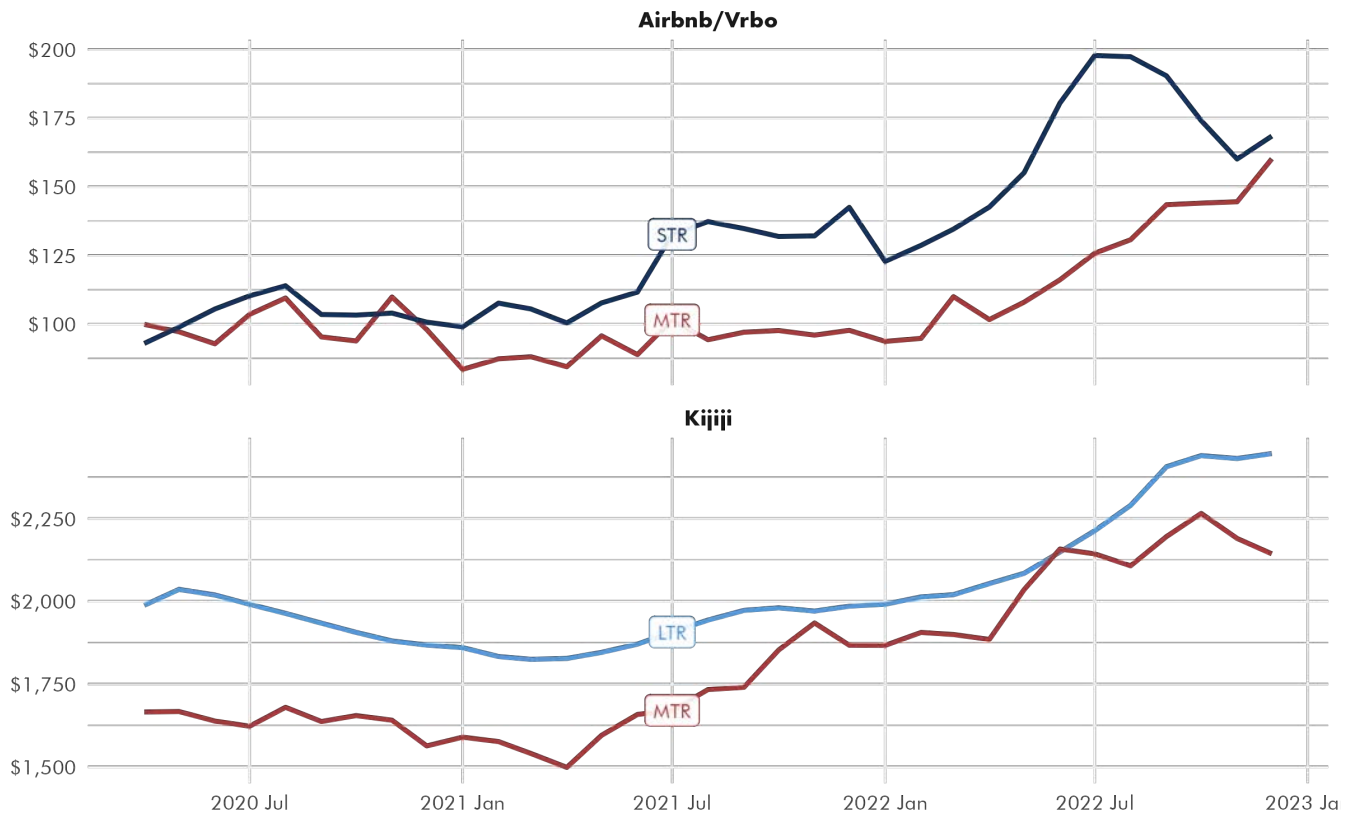


Figure 10. Average nightly prices for STRs and MTRs on Airbnb and Vrbo (top) and average monthly asking rents for LTRs and MTRs on Kijiji (bottom) (geographically weighted monthly average, April 2020 - December 2022)

\$6,450 for 30-nights (the minimum stay period). In comparison, a one-bedroom unit in the same building is listed for long-term rental on *rentals.ca* for \$3,995 per month. MTR-term rental site *mintoapartments.com*, starts at \$249 per day—totalling \$7,470 for 30 days—while a one-bedroom in the same building is listed for \$3,015 per month on the LTR platform *Rentals.ca*.

However, a different picture emerges on Airbnb, Vrbo, and Kijiji, where data permits a systematic comparison. Figure 10 shows the relative trends in rents on Airbnb and Vrbo (top panel) and Kijiji (bottom panel), in each case comparing MTR listings with the predominant listing type on the site. The comparisons weight each ward equally, to avoid being skewed by compositional effects (if, for example, MTR listings were growing faster in high-rent wards than in low-rent wards). Both

platforms show a similar pattern: MTRs are cheaper, controlling for location, than other listing types. On Airbnb, MTRs have lower nightly prices than STRs in the same neighbourhood, and on Kijiji MTRs have lower monthly rents than traditional rentals in the same neighbourhood.

What explains the divergence between anecdotal evidence on dedicated MTR platforms that MTRs are more expensive than traditional rentals and systematic evidence on STR and LTR platforms that MTRs are cheaper than other rental types? Data limitations prevent us from controlling for all the potential factors which might explain this pattern, but one strong possibility is that dedicated MTR sites cater to a less price-sensitive audience—for example corporations looking for executive rentals—than the more mass market STR and LTR platforms.

4. STR and MTR housing market impacts



In May 2023 we estimate there were 3,810 housing units operating as dedicated STRs or MTRs—only 54.5% of Toronto’s peak STR and MTR housing loss of 6,990 units prior the Covid pandemic. Over the last year STR and MTR housing loss grew much more slowly (9.2%) than active daily STR and MTR listings (41.3%). If STR and MTR housing loss had continued on pre-pandemic and pre-regulation trends, there would be 8,910 dedicated STRs and MTRs rather than 3,810. Since Canadian STR markets had mostly recovered from the pandemic by the summer of 2023, this implies that Toronto’s STR regulations are responsible for somewhere between 3,320 and 5,100 housing units being returned to the long-term market.

STR- AND MTR-INDUCED HOUSING LOSS

Prior to the Covid pandemic, Toronto’s housing market had been under considerable stress, with housing prices and rents rising, and rental vacancy rates falling. The pandemic and the shift away from a low-interest-rate macroeconomy have complicated the housing situation in Toronto considerably, but the central fact of Toronto’s housing market remains that the supply of housing is insufficient to meet demand. One possible explanation for both the insufficient supply and elevated demand for housing in Toronto is the growth in short-term rentals. Tourists

are now able to compete with residents for housing—adding demand to the local housing market. And landlords are now able to shift their properties out of the conventional housing market to become dedicated STRs and MTRs—reducing the supply of conventional housing. Research has found that renting a housing unit on the STR market frequently offers landlords greater potential revenue than conventional leases (Wachsmuth & Weisler 2018), especially in transit-accessible neighborhoods (Deboosere et al. 2019). Multiple studies have also found that



Airbnb and other STR platforms increase housing costs (Barron, Kung, & Proserpio 2017; Horn & Merante 2017; Garcia-Lopez et al. 2019).

One of the major considerations when gauging the impacts of STRs and MTRs on a city, therefore, is the extent to which STRs and MTRs are removing long-term housing from the market. This process can occur either directly, where tenants of a unit are evicted or not replaced at the end of a lease and the unit is converted to a STR, or indirectly by absorbing new construction or investment properties which otherwise would have gone onto the long-term market. We use the daily activity of listings, alongside structural characteristics such as listing type and location, to estimate which listings are operating as dedicated STRs and MTRs and are therefore not available as conventional long-term housing.

Frequently Rented Entire-Home (FREH) listings: The number of frequently-rented units is one way to estimate STR- and MTR-induced housing loss. If a STR or MTR is available for reservations the majority of the year and receives many bookings, it is reasonable to assume that it is not serving as an individual's principal residence at the same time. Along these lines, we define frequently rented entire-home (FREH) listings as entire-home listings which were available on Airbnb or Vrbo the majority of the year (at least 183 nights) and were booked a minimum of 90 nights. We then apply a statistical model (described in the appendix) to the FREH data in order to generate

an estimate of FREH activity based on three months of listing activity. This allows us to detect listings which are operating in a full-time manner but have not yet been listed for an entire year, and allows us to account for relatively short-term changes in market conditions.

Ghost hostels: In addition to FREH listings, it is possible that entire housing units have been subdivided into multiple private-room listings, each of which appearing to be a spare bedroom or the like, while actually collectively representing an apartment removed from the long-term housing market. We call these clusters of private-room listings "ghost hostels", building on the advocacy group Fairbnb.ca's term "ghost hotels" — multiple FREH listings located in a single building, collectively serving as de facto hotels instead of long-term housing (Wieditz 2017). We detect ghost hostels by finding clusters of three or more private-room listings operated by a single host, whose reported locations are close enough to each other that they are likely to have originated in the same actual housing unit. (Airbnb and Vrbo obfuscate listing locations by shifting them randomly up to 200 m.)

In May 2023, there were 1,750 FREH STR listings and 1,110 FREH MTR listings in the City of Toronto. There were also 310 housing units operating as STR ghost hostels and 640 operating as MTR ghost hostels. In total, therefore, short-term and medium-term rentals on Airbnb and Vrbo were taking 3,810 housing units off of Toronto's long-term market at

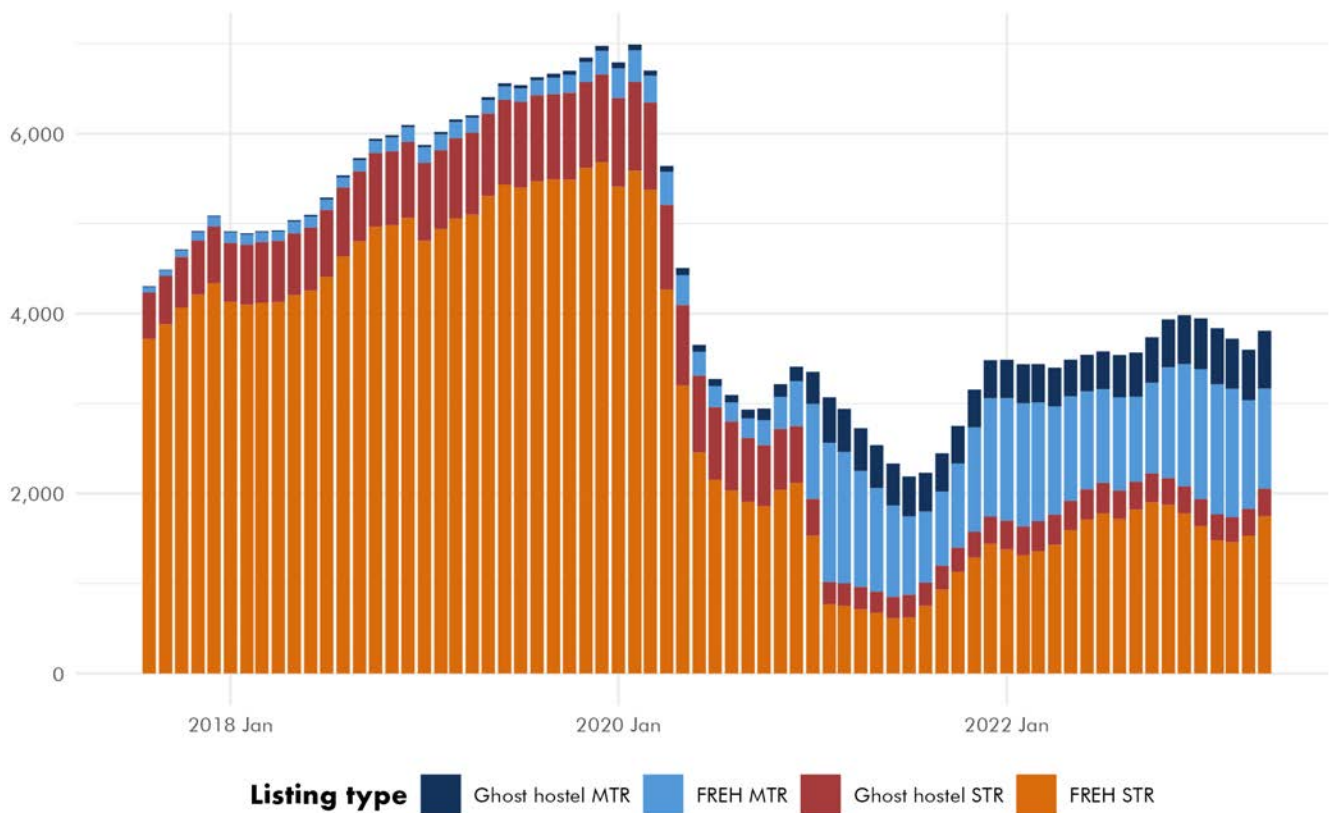


Figure 9. Housing units converted to dedicated STRs and MTRs in the City of Toronto (monthly average)

the end of the year (Figure 9). This is only 54.5% of Toronto’s peak STR and MTR housing loss of 6,990 units on the eve of the Covid pandemic. Notably, while the number of active daily STR and MTR listings increased by 41.3% from June 2022 to June 2023, the number of housing units which STRs and MTRs took off of Toronto’s housing market increased at a much slower 9.2% rate. So, while housing loss from STRs and MTRs has been increasing, it is lagging behind broader growth in the STR and MTR markets in Toronto. This mirrors a similar dynamic during the pandemic, when commercial STR and MTR activity declined at a much faster rate than overall STR and MTR activity in Toronto.

Table 3 summarizes STR-and MTR-induced housing loss patterns by neighbourhood. It demonstrates that the City-wide trend of slowly rebounding dedicated STRs and MTRs in fact

comprises some neighbourhoods with rapid housing loss increases and others where housing loss is in decline.

The 3,810 housing units taken off of Toronto’s housing market in 2023 are 0.3% of the total amount of housing in the city, and this housing loss has been concentrated in small parts of the city. In most of Toronto, there are relatively few dedicated STRs, while in the centre of the city as well as a few transit corridors, they are common. In the Spadina-Fort York ward, 0.8% of all housing units were operating as dedicated STRs or MTRs in May 2023 (although this number is down 7.0% year over year, in contrast with growth throughout most of the rest of the city). The figure is 0.7% for University-Rosedale—the ward which also saw among the fastest growth in housing units converted to dedicated STRs or MTRs in the last year (Figure 10).

Ward	Housing loss (May 2023)	Housing loss (May 2022)	Year-over-year change	% of housing lost (May 2023)
City of Toronto	3,810	3,490	9.2%	0.3%
Spadina-Fort York	760	820	-7.0%	0.8%
University-Rosedale	440	350	26.4%	0.7%
Toronto Centre	290	270	6.8%	0.4%
Davenport	240	230	4.9%	0.5%
Willowdale	220	250	-10.4%	0.4%
Toronto-Danforth	150	140	7.4%	0.3%
Etobicoke-Lakeshore	150	110	42.8%	0.2%
Parkdale-High Park	140	140	0.8%	0.3%
Beaches-East York	130	90	46.0%	0.3%
Toronto-St. Paul's	120	100	15.9%	0.2%
Don Valley North	110	130	-13.1%	0.2%
York South-Weston	100	80	33.9%	0.2%

Table 3. STR- and MTR-induced housing loss for wards with at least 100 housing units lost in 2023

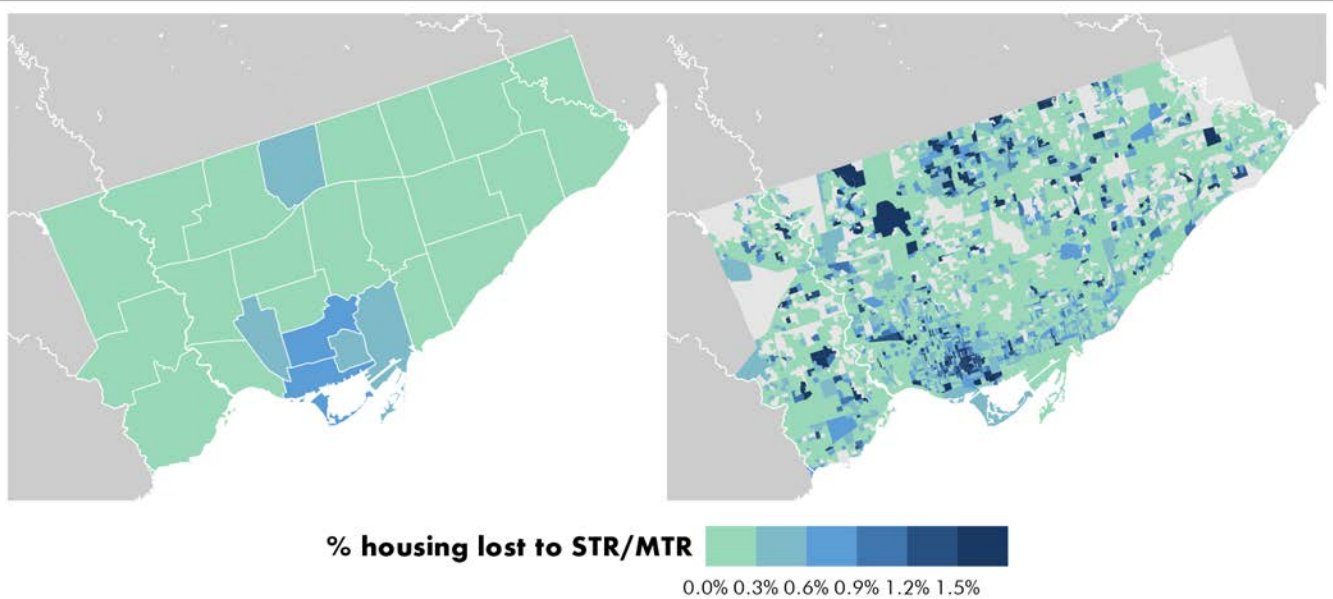


Figure 10. The percentage of housing units converted to dedicated STRs and MTRs in the City of Toronto, by ward (L) and dissemination area (R) (May 2023)

HOUSING LOSS TREND ANALYSIS

Using trend analysis, it is possible to estimate how much STR-induced housing loss would have been expected to have occurred in the absence of the pandemic and the introduction of the City's STR regulations. Because these two shocks to Toronto's STR market occurred in the same time frame, it is not possible to disentangle them. However, our research in other Canadian jurisdictions has established that the broader STR market had more or less fully recovered by the beginning of summer 2023. So it is a reasonable assumption that much of the lingering gap between the pre-pandemic trend of housing loss and the actual 2023 figures can be attributed to the City's STR regulations.

Figure 11 displays the shortfall between actual STR- and MTR-induced housing loss and the housing loss which would have been expected in the absence of the pandemic. As of May 2023,

there are fewer than half the number of dedicated STRs and MTRs which would have been expected had the pre-pandemic trend continued. We estimate 3,810 actual housing units lost, but the trend would have predicted 8,910—134% higher.

This gap provides an upper-bound estimate on the impact of the City's STR regulations on housing loss to STRs and MTRs. The regulations could plausibly be responsible for up to 5,100 homes being present on the long-term market that otherwise would be dedicated STRs. Even if we conservatively assume that the pandemic's impacts on STR demand would still be keeping housing loss depressed by 20% compared to the pre-pandemic growth trend, this still implies that the City's regulations are responsible for 3,320 homes being available on the long-term market that otherwise would not be.

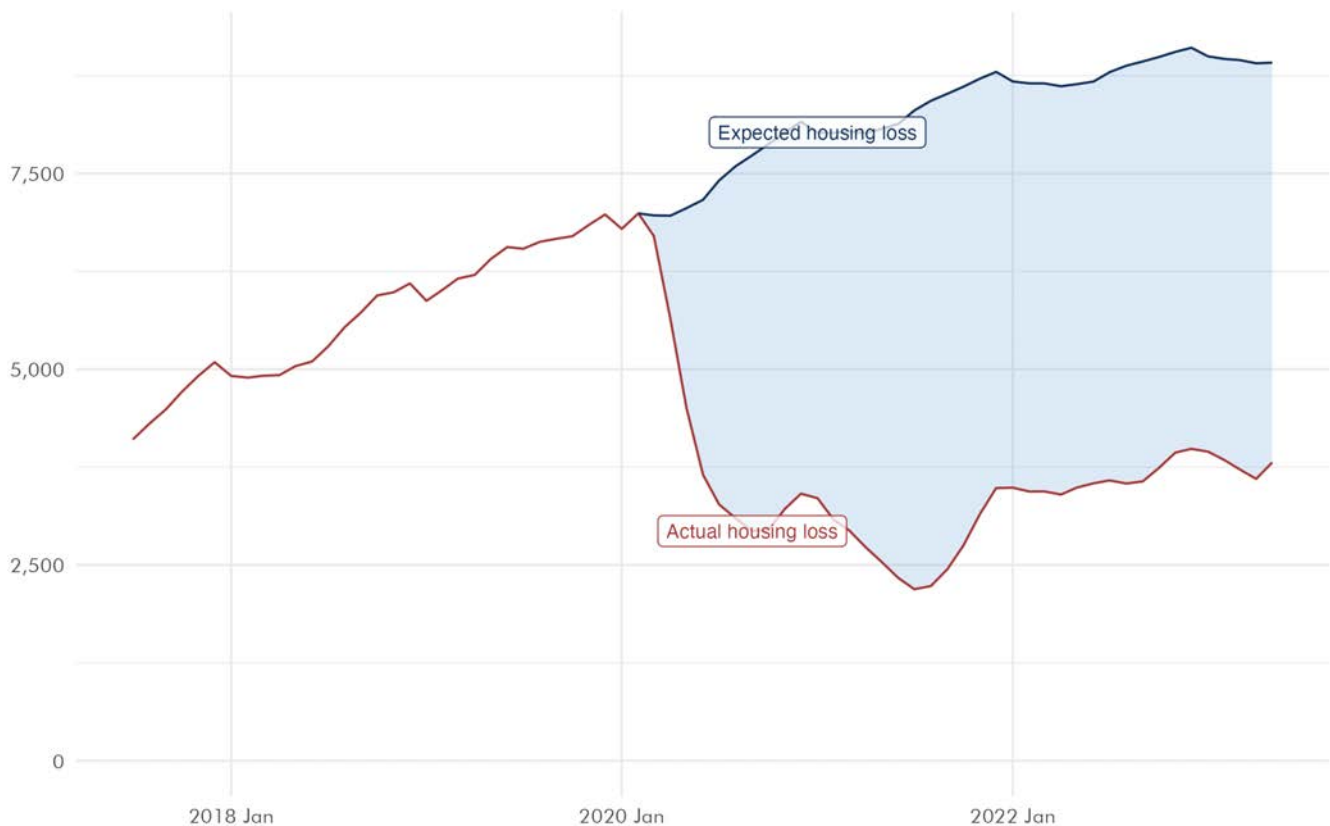


Figure 11. Actual and expected STR-induced housing loss (monthly average)

5. STR regulatory compliance



Two and a half years since the introduction of the City’s STR regulations, most displayed Airbnb listings are MTRs (77.3%) and thus exempt from registration requirements. 22.1% of Airbnb listings have valid registration numbers, 0.3% claim an exemption, and 0.3% are STR listings with an expired or fake registration number. The prevalence of fake licenses has declined sharply: in February 2021, 2.6% of STR listings had a fake license number, compared to 0.3% in July 2023. Of STR listings with valid registration numbers, 16.0% are at high risk of violating the City’s STR rules, most often because they are likely not operated out of their host’s principal residence.

THE EARLY IMPACT OF TORONTO’S STR REGULATIONS

As of 1 January 2021, all STR operators in Toronto are required to be registered with the City. This means that all properties displayed on Airbnb and other online rental platforms (with the exception of MTR properties rented exclusively for 28 days at a time or longer, and hotels and other tourist accommodations which are regulated separately) must have a registration visible on the platform.

In our previous analysis, conducted shortly after the City’s STR regulations took effect, we found that the new rules had two immediate impacts (Wachsmuth

et al. 2021). The first was that approximately 2,600 listings were taken down from Airbnb’s platform in mid-January 2021, nearly all of which had failed to display a registration number. The most likely explanation for this is that Airbnb removed these listings en masse. The second impact was that Airbnb converted the majority of remaining, unregistered Airbnb listings in Toronto to 28-day minimum rentals, which means they are not subject to the STR bylaw. The result was that relatively few listings had registered, but also relatively few listings were in violation of the regulations.

STR REGULATORY COMPLIANCE SINCE 2021

Between July 6 and July 9, 2023, we scraped every Airbnb listing in the City of Toronto to identify the presence or absence of a registration number. Airbnb offers a dedicated field where hosts are meant to indicate their registration number, but, in order to be sure that we did not miss any listings, we searched the entire text of each listing page for the presence of text with the format STR-####-AAAAAA, which is the only valid format for a City of Toronto STR license.

How many listings display a valid license number?

Figure 12 shows the registration status of the 24,707 Airbnb listings which were publicly accessible from July 6-9. As the figure demonstrates, the overwhelming majority of listings were either exempt from registration because they were MTRs with a minimum stay of at least 28 days (19,100, or 77.3% of the total) or were STRs with a valid license number (5,459, or 22.1% of the total).

85 listings (0.3% of the total) were STRs that claimed some non-MTR exemption (e.g. they claimed to be a hotel or B&B). Finally, 63 listings (0.3% of the total) displayed a license number that was either expired or fake. There were no STR listings displaying no license number at all.

These findings suggest several conclusions. First, as the analysis in preceding chapters already demonstrated, the status quo established in the aftermath of the City first implementing its STR rules in early 2021 remains in effect: most listings on Airbnb have shifted from the STR to the MTR market, and thus most listings advertised on Airbnb are not registered with the City. Second, in contrast to the situation in early 2021, there are now extremely few cases of outright false registration numbers on Toronto Airbnb listings. In February 2021, when we did our initial analysis, we found that 2.6% of displayed listings had a fake license number, and two and a half years later that proportion has dropped to 0.3%.

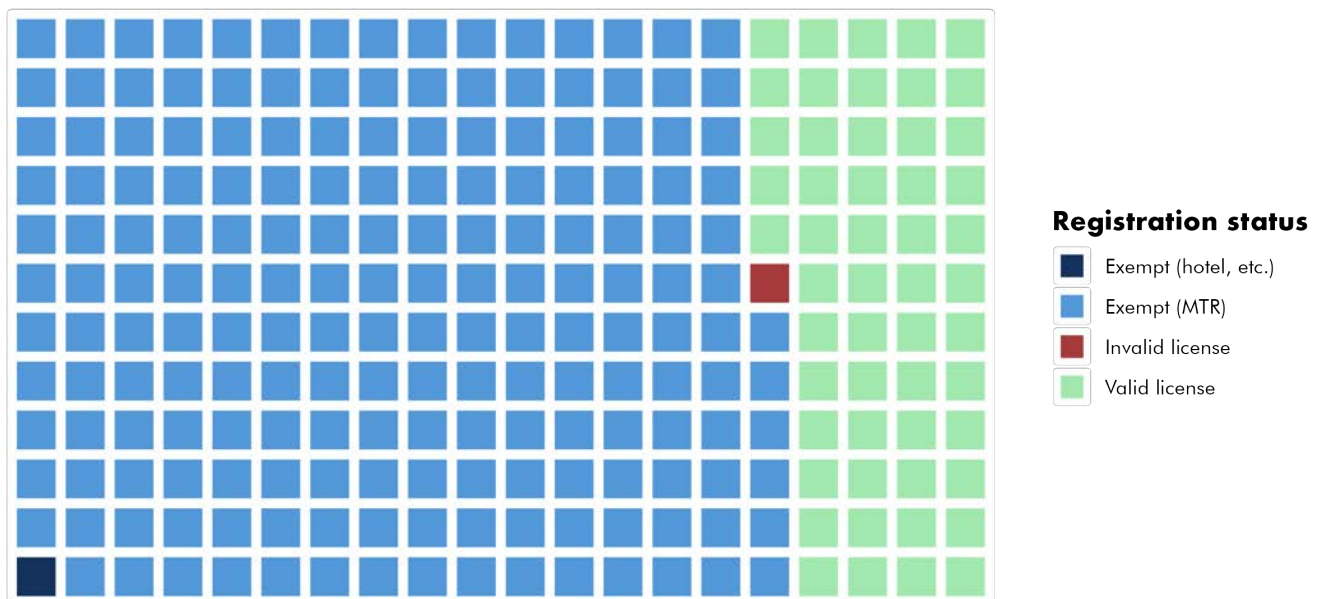


Figure 12. Total displayed Airbnb listings by registration status in July 2023 (each square is 103 listings)

How many listings are potentially violating the City’s rules despite having a valid license number?

Even if a listing has a license number which has been correctly issued by the City, there are several circumstances under which the listing could still be in violation of the City’s rules. First, the license could be used at a property which is different from the one for which the license was issued. Second, the license could be used at multiple properties, or for more than three bedrooms in the same property. And third, the license could be used for a listing which is not in fact operated out of the principal residence of the person who received the license. In each of these cases, it would not be possible to conclusively determine that the license conditions are being violated without conducting an inspection—for example, a listing whose location is distant from the actual registered property could be mis-located on Airbnb due to an error by the host. But aggregated analysis can identify the potential magnitude of these rule violations.

Figure 13 shows the proportion of listings with a valid license which are potentially violating each of the three issues identified above. The numbers are not trivial. 100 listings (1.8% of the total number of listings with apparently valid license numbers) have reported locations on Airbnb which are further than 500 metres from the address which was registered for an STR license. 299 listings (5.5% of the total) have a permit number which is shared among four or more listings. And 515 listings (9.4% of the total) were identified in our statistical analysis as being at high risk of being a frequently-rented entire home (FREH) listing which is not the principal residence of its host. In total (because of double counting between the categories), 873 listings—16.0% of all listings with valid license numbers—are at high risk of being in violation of the City’s STR rules.

A scan of listing descriptions and reviews associated with the listings identified here supports the contention that many of them are in violation of the City’s rules. For example, one listing has a review which begins: “Sharon’s place appears to

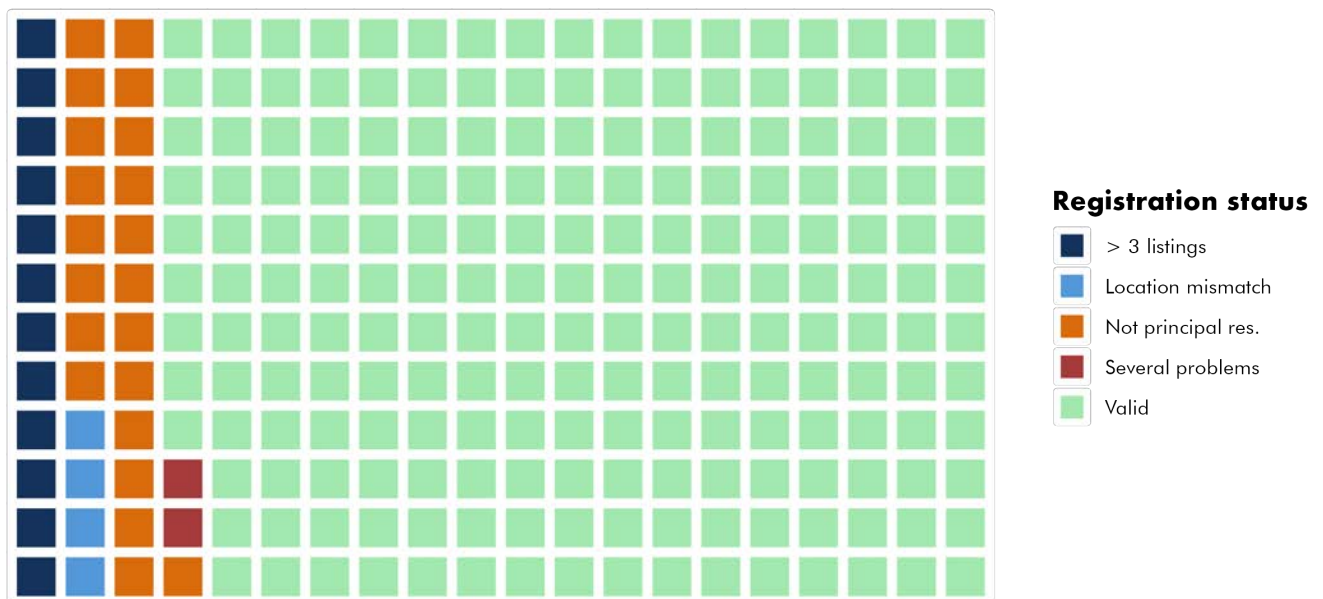


Figure 13. Possible license problems among listings with valid license numbers (each square is 23 listings)

Registration status	Total listings (July 2023)	Entire-home listing proportion	Avg. reserved nights (Jan. - May 2023)	Avg. active nights (Jan. - May 2023)	Avg. revenue per night (Jan. - May 2023)
Exempt (MTR)	15,338	69.1%	7.2	32.1	\$178
Valid license	4,008	69.0%	35.8	71.2	\$234
Potential violation	823	33.5%	88.5	114.9	\$158
Invalid license	60	68.3%	48.0	84.8	\$253
Exempt (hotel, etc.)	16	56.2%	30.1	64.3	\$372

Table 4. STR and MTR activity in 2023 by STR license status

be part of a high volume dedicated AirBnB business. It is run very professionally.” Another listing is described by the host themselves as “A clean, private two bedroom apartment in the fully finished basement of our funky and well kept bungalow.” Since this listing includes a separate kitchen and bathroom, it falls under the City’s definition of a secondary suite, and is thus not eligible to be operated as a STR by the residents of the building’s main housing unit.

Finally, we analyzed reservation, availability and revenue patterns for all Airbnb listings which were included in our registration web scrape in July 2023 and which had been active between January and May 2023 to understand the relationship between displaying a valid license number and STR or MTR activity. Table 4 summarizes this information.

MTR listings which are exempt from registration requirements have by far the lowest amount of rental activity—only 7.2 nights reserved on average over the first five months of 2023. By contrast, STR listings which have a valid license number but which we identified as being at high risk of violating the City’s STR rules have seen by far the most rental activity. These listings have been reserved an average of 88.5 nights so far in

2023—which is an occupancy rate of almost 60%. This pattern is driven by the fact that FREH listings which are likely not actually the host’s principal residence make up a large share of the potential violations, and these listings receive extremely high levels of reservations. The very small number of listings operating with fake or expired license numbers are still highly active on Airbnb, on average receiving more reservations and for higher nightly prices than listings with valid licenses.

The implications of this analysis are: 1) Several years after the introduction of the City’s STR rules, the large majority of listings continue to evade the need for registering because Airbnb shifted them to 28-day minimum stays, but these listings are not highly active. 2) Apparent compliance among STR listings is very high, with only 0.3% of non-exempt STR listings operating without a valid license number. 3) Actual compliance is significantly lower, because 16.0% of listings with valid license numbers are at high risk of violating at least one aspect of the City’s STR rules. Listings which do not have activity patterns consistent with being a host’s principal residence are particularly concerning, since in the first five months of 2023 they were reserved at more than double the rate of listings with unambiguously valid licenses.

6. Movement between short-, medium-, and long-term markets



Using image recognition, we identified 5,068 unique Airbnb listings which matched with 10,430 different MTR or LTR listings from April 2020 through December 2022. Nearly half (42.1%) of STR listings moving to LTR platforms were located in the Spadina-Fort York ward. STRs moving to the MTR and LTR markets from April 2020 through January 2021 were correlated with a significant decline in asking rents: asking rents for MTR/LTR listings matched to STR listings were 10.1% higher than non-matched listings, but city-wide rents declined 11.2% in the same time period. In the period of time since STRs stopped returning to the long-term market, asking rents rose 41.0%—from \$1,890 in early February 2021 to \$2,664 in mid December 2022. For STR listings reposted on LTR platforms prior to February 2021, positive financial performance predicted a switch from STR to MTR or LTR markets. But for listings reposted on LTR platforms since then, negative financial performance predicts a switch from STR to MTR or LTR markets.

HOW MANY PROPERTIES HAVE MOVED BETWEEN SHORT-TERM AND MEDIUM- OR LONG-TERM RENTAL PLATFORMS?

The combination of the Covid-19 pandemic and then the imposition of the City's STR regulations caused an unprecedented decline in STR activity in Toronto. Under these circumstances, it would be reasonable to imagine that some STR hosts—particularly commercial operators who had come to expect large income streams from their properties—may have decided to return their listings to the long-term housing market, either temporarily or permanently. To investigate this

possibility, we collected listing images from all properties posted to Craigslist and Kijiji in Toronto between April 2020 and December 2022, and used image recognition analysis to match STR listings on Airbnb and Vrbo to long-term rental (LTR) listings on Craigslist and Kijiji. These latter two platforms represent only a portion of the LTR market, but provide useful insight into how STR hosts responded to the collapse in accommodation demand during the Covid-19

pandemic and the stricter City rules on STR operations. If the exact same photo of an apartment's living room was uploaded to Airbnb in August 2019 and then to Craigslist in April 2020, this provides proof that the property in question has moved from the STR market to the LTR market. Likewise, if a photo from a Kijiji listing is subsequently used for an Airbnb listing, this provides proof that the property in question has moved from the LTR market to the STR market. The image recognition software we developed is able to identify matches between images which are identical, but also images which the host has modified slightly (for example by changing the tint, or by adding a text overlay), and thus allows us to reliably identify every match which exists between STR and LTR platforms.

Our image matching algorithm recognized 5,068 unique Airbnb listings which matched with 10,430 different MTR or LTR listings (as some units are posted multiple times) in the City of Toronto. The matching LTR listings were roughly equally found on Kijiji (5,656 listings, or 54.2%) and Craigslist (4,774 listings, or 45.8%). Out of the 5,068 matching Airbnb listings, 67.0% (3,396 listings) were created or still active in 2020 or later. We

suspect that many or most of the remaining properties were also still active under a different listing ID and with a different photo, since commercial STRs are delisted and relisted quite frequently. We thus consider the 5,068 Airbnb listings which we matched to Craigslist and Kijiji to be a lower bound for the number of unique housing units that moved between the STR and MTR/LTR markets following the beginning of the Covid-19 pandemic. (Each listing which we matched is guaranteed to have been listed both on Airbnb and on either Kijiji or Craigslist, but there are certain to be additional listings which we did not match because the host did not reuse the same photographs.)

Of the 5,656 Kijiji listings matched to Airbnb, 67.2% were identified by their hosts as "long-term rentals" and 32.8% as "short-term rentals" (i.e. MTRs). Among matched Kijiji listings, 46.5% specified lease lengths of one year (i.e. standard long-term rentals), 14.4% specified month-to-month (i.e. medium-term rentals), and 39.1% did not specify. Across both Craigslist and Kijiji, 54.4% of matched listings were advertised as furnished rentals, which implies a high level of MTR as opposed to LTR activity among properties exiting the STR market.



WHEN DID LISTINGS MOVE BETWEEN SHORT- AND MEDIUM- OR LONG-TERM MARKETS?

The first Covid-19 case in Ontario was confirmed on January 25, 2020, but the pandemic did not fully erupt until the second week of March 2020, when public facilities and private businesses began to close, culminating in a Provincial declaration of public emergency on March 17. Consistent with this timeline, what was in early March a trickle of Airbnb listings moving to Craigslist or Kijiji began to accelerate in the second half of the month (Figure 14). By the end of the March, the number of newly created STR listings which we matched to LTR listings reached 49 daily. Daily numbers continued to grow into the summer, and from May through December 2020 an average of 82.4 Airbnb listings were posted on Craigslist or Kijiji in Toronto each day.

It is likely, although there is no way to be sure, that the knowledge among commercial STR hosts that their listings would be illegal and subject to enforcement action when the City's STR by-law started being proactively enforced on 1 January 2021 contributed to the transfer of STR units to the long-term market in the latter months of 2020. Likewise, the surge in STR-to-LTR listing transfers in January 2021 and then the continued high volume through the first half of 2021 is plausibly attributable to the City's STR regulations coming online and changing the viability of operating a commercial STR in Toronto.

Figure 15 on the next page offers a different perspective on the movement of housing units from the short-term to long-term rental markets. It shows

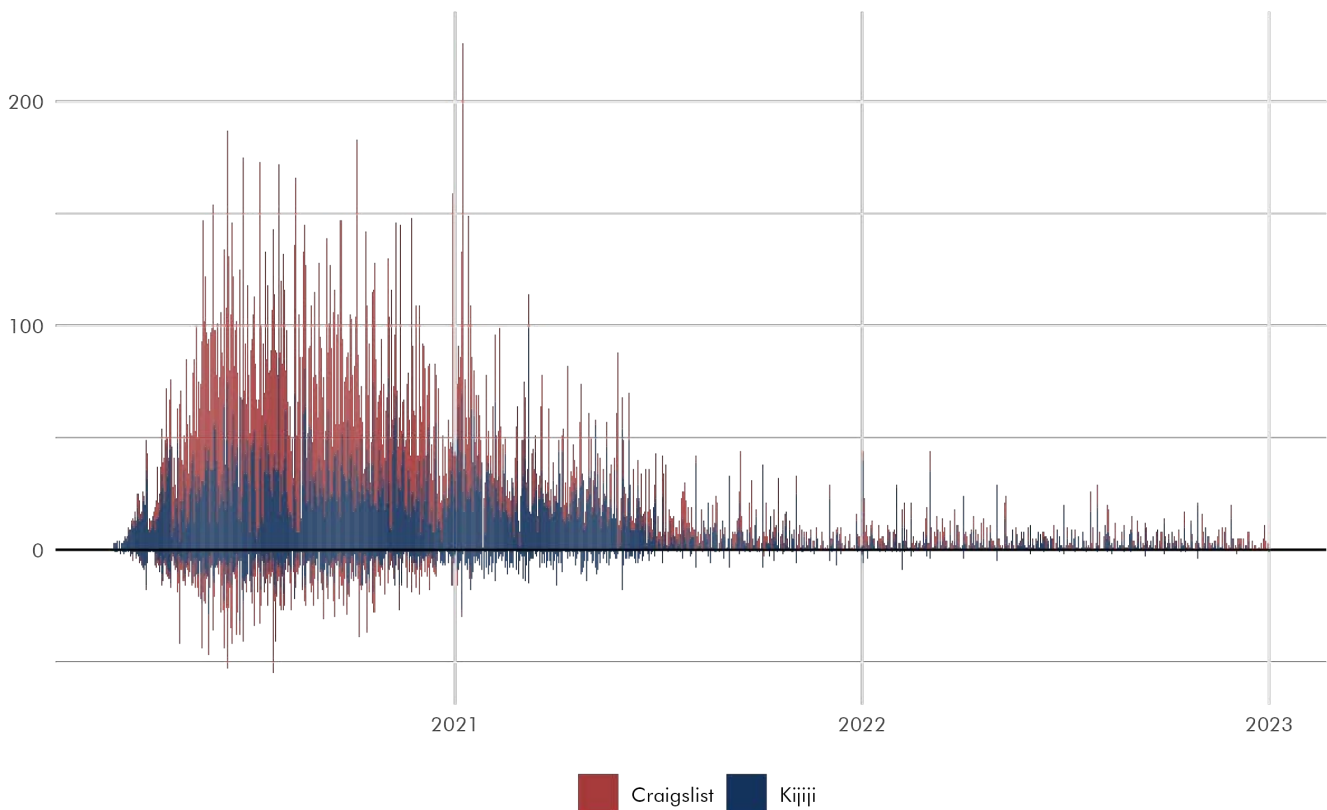


Figure 14. The number of Airbnb and Vrbo listings posted on Craigslist or Kijiji (positive values) or Craigslist and Kijiji listings posted on Airbnb or Vrbo (negative values) each day in Toronto (March 2020 - December 2022)



Figure 15. The share of new MTR/LTR listings which had previously been detected on Airbnb or Vrbo (one-week moving average, March 2020 - December 2022)

the percentage of newly created MTR or LTR listings which we matched to previous STR listings. At the beginning of the pandemic, this proportion was as high as 15 percent, which indicates that one in six newly advertised long-term rentals in Toronto was transitioning from being a short-term rental. The proportion remained above three percent through the beginning of 2021, when the City’s new STR regulations likely pushed additional STRs back onto the long-term market, and then hovered around two percent through the middle of 2021. Since then, there have consistently been fewer than one in 200 new MTR or LTR listings that were previously STRs, indicating that the combined impact of the pandemic and the City’s regulations on STR hosts to transition their units to the medium- or long-term market concluded in mid-2021.

While the vast majority (90.4%) of movement we detected between STR and LTR platforms was from short-term to long-term, throughout 2020 in particular there was also a noticeable flow of listings in the opposite direction: listings which we first detected on LTR sites and which were subsequently posted on Airbnb. (The volume of these movements is shown in the area below the x-axis in Figure 14 on the previous page.)

Importantly, we detected very little of this activity in 2022, even as the number of active short-term rentals was steadily rising. This may suggest that the recent increase in STR activity is driven by an intensification of activity among existing STRs rather than the introduction of new housing units into the STR market.

SPATIAL DISTRIBUTION OF MATCHED LISTINGS

Out of the 4,472 unique STR listings which we detected moving to LTR platforms in the City of Toronto, nearly half (42.1%) were located in the Spadina-Fort York ward. 11.7% of matches were in the University-Rosedale ward, followed by 11.5% in Toronto Centre. The rest of the wards had fewer than 6% of matched listings each. Even accounting

for the general concentration of STRs in Spadina-Fort York, this ward is still highly over-represented in these matches (Figure 16 on the next page). Toronto Centre is likewise over-represented. The number of STR listings matched to MTR and LTR listings in Spadina-Fort York is equivalent to almost half (43.4%) of all the STR listings active in the ward

in March 2020, and more than a sixth (17.3%) of all listings active in the ward from March 2020 through May 2023. In Toronto Centre, the matches

found represent 42.4% of all active STR listings in March 2020, and 16.5% of all listings active in the ward from March 2020 through May 2023.

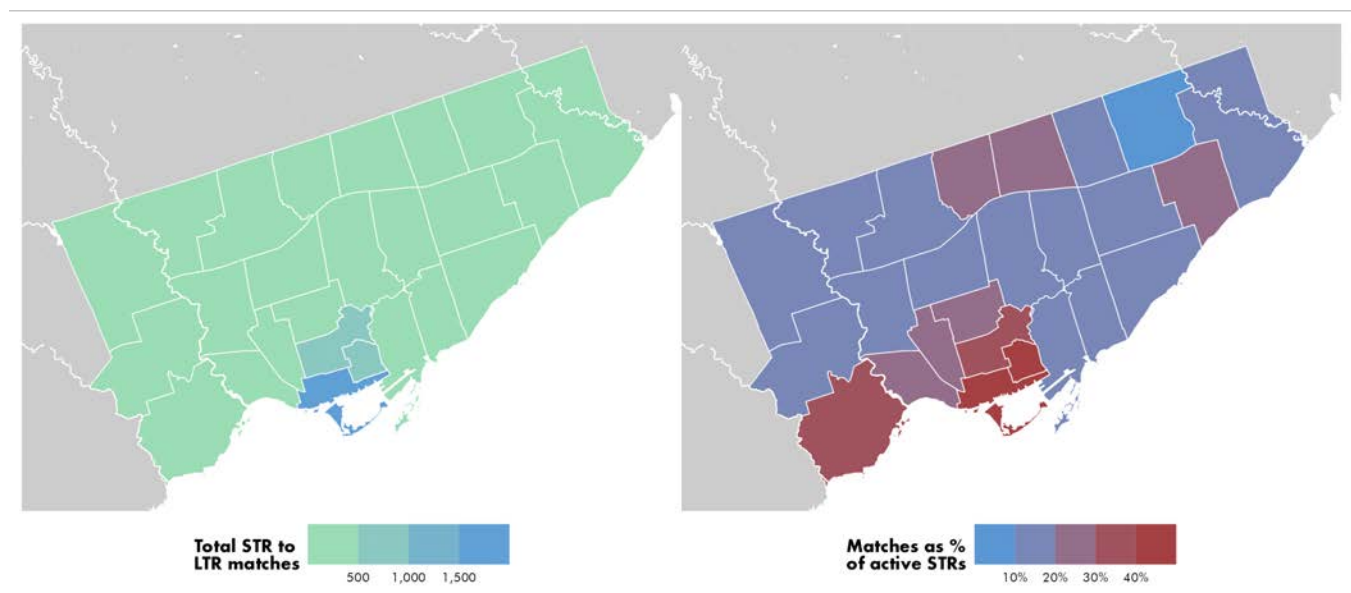


Figure 16. Total number of STR listings matched to LTR listings (L), and matched STR listings as a percentage of active listings in March 2020 (R), by ward

ASKING RENTS

Figure 17 on the next page shows the average asking rents of listings posted to Craigslist and Kijiji between April 2020 and December 2022, city-wide in the left panel and for Spadina-Fort York in the right panel. There are two clearly distinguishable time periods: April 2020 through early 2021, during which time rents declined and many STRs transitioned back to the long-term market, and the period from mid 2021 through the end of 2022, when rents were rising quickly and STRs were no longer transitioning to the long-term market in significant numbers.

In the first time period, the asking rents of the STR-LTR matches remained significantly higher than non-matched LTR listings city-wide. In April 2020, when the average asking rent on LTR platforms in

the City of Toronto was \$2,150, the average asking rent among listings which we matched to Airbnb was \$2,472—15.0% higher. Over the course of the spring and the rest of the year, average asking rents for LTR listings matched to Airbnb declined continuously. In January 2021, the average asking rent was \$1,904 for all Craigslist and Kijiji listings and \$2,049 for the matches. Overall, from April 2020 to January 2021, asking rents for Craigslist and Kijiji properties matched to STR listings were 10.1% higher than the city-wide average.

A large portion of the divergence in asking rents in the first time period between LTR listings matched to Airbnb and listings not matched is a compositional effect of the much greater frequency of a Spadina-Fort York location (which

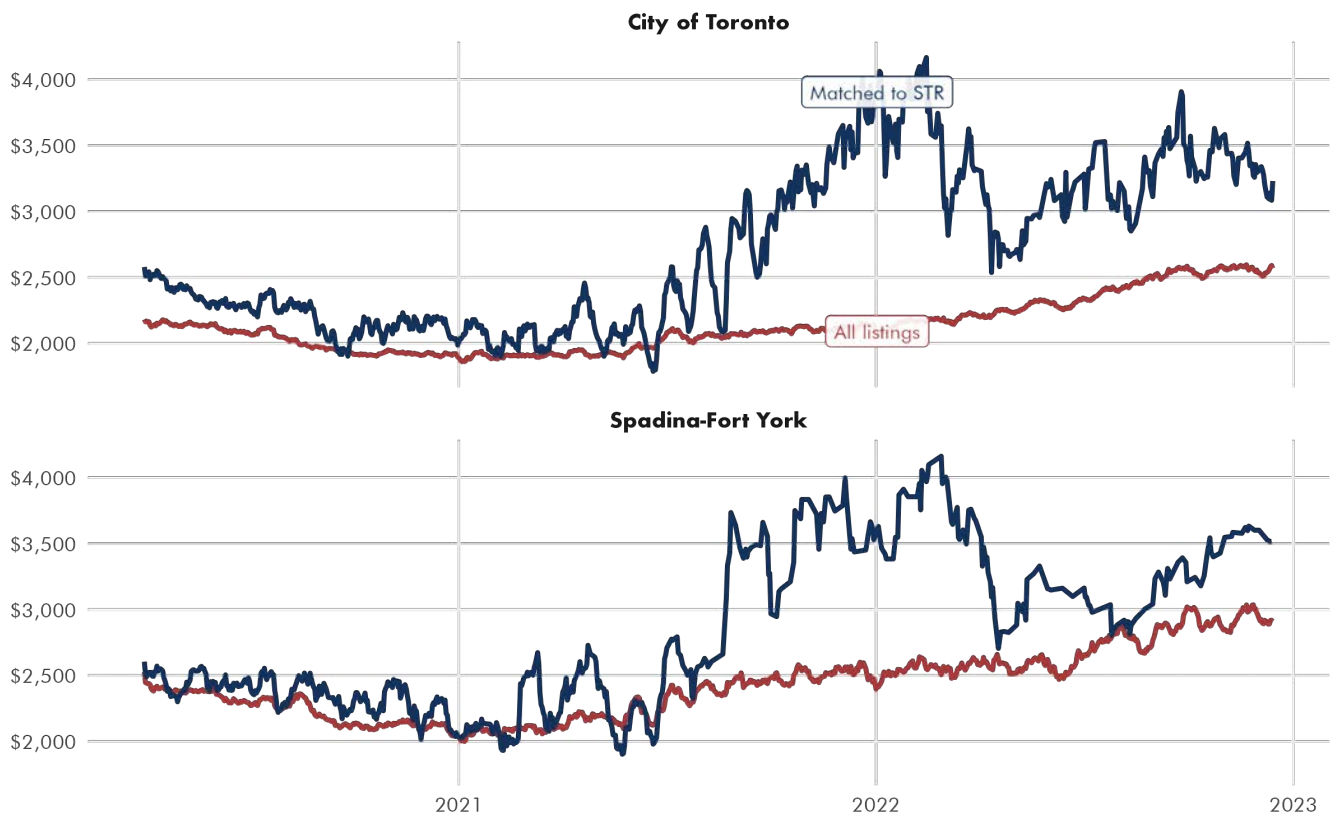


Figure 17. Asking rents on Craigslist and Kijiji in the City of Toronto (L) and Spadina-Fort York (R) (two-week moving average)

commands higher prices than the rest of the city) among matched listings (the bottom panel of Figure 17). Even in this ward, however, LTR listings matched to STRs between April 2020 and January 2021 were on average 5.2% more expensive than listings not matched.

The second time period—from mid 2021 to the end of the 2022, is characterized by rising overall rents both across the City of Toronto and in the Spadina-Fort York ward. During this time period, the asking rents of STRs returning to the long-term market skyrocketed. The specific month-to-month pattern of these asking rents is not reliable enough to draw strong conclusions from, since the volume of listings moving between STR and MTR/LTR markets was rather low. However, the most plausible interpretation of the overall pattern is

that, following the one-time regulatory shock of STR listings requiring a license number and as post-pandemic STR demand increased throughout 2022, the minimum rents necessary to induce STRs to shift to the medium- or long-term market grew substantially.

Overall, STRs moving to the medium- and long-term market in 2020 and early 2021 were correlated with a significant decline in asking rents. The average city-wide asking rent on Craigslist and Kijiji declined 11.2% from \$2,135 in early April 2020 to \$1,897 in late January 2021. By contrast, in the period of time since STRs stopped returning to the long-term market, asking rents rose 41.0%—from \$1,890 in early February 2021 to \$2,664 in mid December 2022.

THE FINANCIAL PERFORMANCE OF STRS WHICH MOVED TO THE MTR AND LTR MARKETS

Figure 18 shows the average monthly STR revenue for listings which we matched to MTR or LTR listings from April 2020 and January 2021 (in blue), STR listings which we matched to MTR or LTR listings from February 2021 to December 2022 (in red), and listings which we did not match to LTR listings (in grey). The figure demonstrates significantly different activity patterns for the two groups of listings switching from STR to MTR and LTR markets.

The STR listings which we matched to new MTR/LTR listings between April 2020 and January 2021 had substantially stronger financial performance than other STR listings over the same time period. Through 2020, non-matched listings had an average monthly revenue of

\$953. (This and subsequent calculations omit listings which were displayed but were not available for reservations). Meanwhile, listings which were reposted on LTR websites prior to February 2021 had an average monthly revenue in 2020 of \$1,283—34.6% higher. Over this same time period, by contrast, STR listings which subsequently switched to LTR platforms (from February 2021 to December 2022) were nearly indistinguishable from non-switching listings, with average 2020 monthly revenue of \$988. In other words, high 2020 revenue strongly predicted STR listings switching to LTR platforms in the context of the Covid pandemic and the imposition of the City’s STR regulations, while listings which made the switch

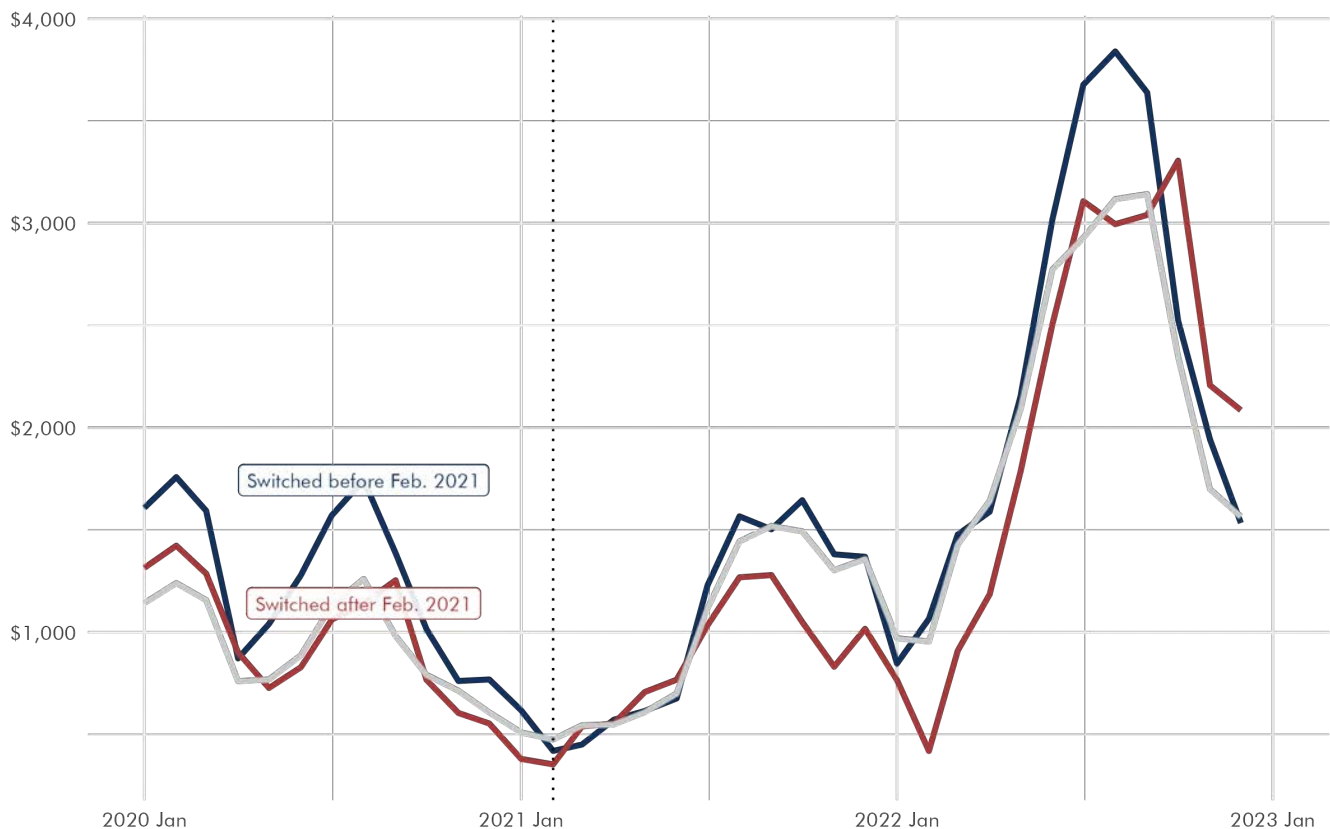


Figure 18. Average monthly STR revenue for listings which switched to the LTR market before (blue) or after (red) February 2021, compared to listings which did not switch (grey)

later did not stand out from non-switching listings.

After January 2021, a noticeably different pattern is visible. STR listings which were reposted on LTR platforms from February 2021 through December 2022 had substantially lower revenue than non-switching listings. Between February 2021 and June 2022, these listings had an average monthly revenue of \$998, which was 19.1% less than the \$1,233 average monthly revenue of non-switching listings. Meanwhile, STR listings which had previously been reposted on LTR platforms but continued to be active STRs (because they had failed to make a full transition to the long-term market) were virtually indistinguishable from non-matching listings, with an average monthly revenue of \$1,269.

To summarize: for STR listings which were reposted on LTR platforms during the pandemic

and in the lead-up to the City's STR regulations coming online, positive financial performance predicted a switch from STR to MTR or LTR markets. But for listings which have been reposted on LTR platforms since then, it is negative financial performance which predicts a switch from STR to MTR or LTR markets.

This pattern suggests that the underlying dynamic has changed; while the pandemic and a changing regulatory environment previously induced high-performing (usually commercialized) STRs to switch to LTR platforms, the evidence is that more recently listings transitioning from short-term to long-term markets are doing so simply because they are failing to perform as short-term rentals. This is expected behaviour in a competitive market, and indicates that Toronto's STR market has returned to a post-pandemic, post-regulatory-shock status quo.



Appendix. Data and methodology



The analysis in this report is based on a combination of private and public data sources. The key sources are the following:

- **Listing and activity data about Airbnb and Vrbo short-term rental listings gathered by the consulting firm AirDNA.** This data includes canonical information about every short-term rental (STR) listing on the Airbnb and Vrbo (including HomeAway) platforms which was active in Toronto between January 1, 2016 and May 31, 2023. The data includes “structural” information such as the listing type (entire home, private room, shared room or hotel room), the number of bedrooms, and the approximate location of the listing. AirDNA collects this information through frequent web scrapes of the public Airbnb and Vrbo websites. The data also includes estimates of listing activity (was the listing reserved, available, or blocked, and what was the nightly price?), which AirDNA produces by applying a machine-learning model to the publicly available calendar information of each listing. We use this data for our core analysis of the STR market, including our counts of active listings, our breakdown of different listing types, our estimates of STR-induced housing loss, and our estimates of listings which are commercial operations.
- **Additional data about Airbnb listings collected by UPGo researchers.** This includes information to verify activity, location and registration numbers, and listing photographs which were obtained through web scrapes.
- **Data about long-term rental listings on Kijiji and Craigslist.** This data includes the geographic location of listings advertised, the asking rent, the number of bedrooms, the number of bathrooms, the title, and the photographs attached to the posting. This data was collected by UPGo through web scrapes conducted each Monday from March 30 to December 31, 2022. We use this data to identify listings which have moved between the short-term and long-term housing markets.
- **Data from Statistics Canada and the Canada Mortgage and Housing Corporation (CMHC).** We use this data to analyze population and dwelling counts.

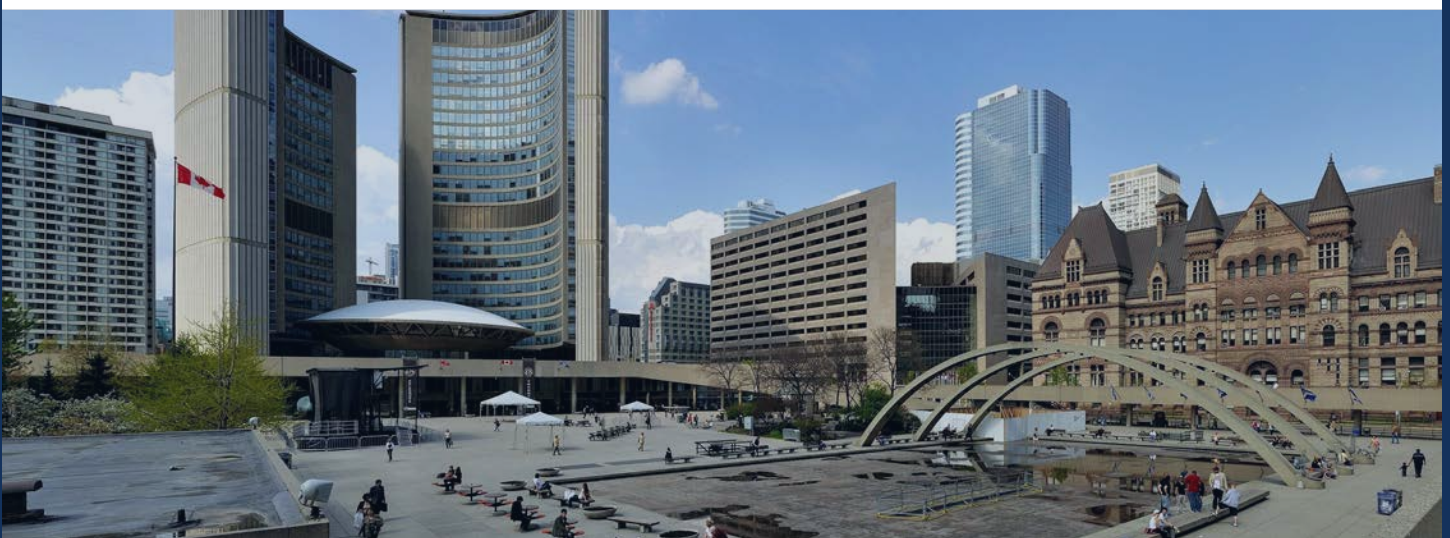
- **Short-term rental registration data from the City of Toronto’s open data portal.** We use this data to analyze regulatory compliance, in order to determine the impact and effectiveness of Toronto’s STR regulations.

Data cleaning: We process the raw STR data we receive from AirDNA through an extensive data cleaning pipeline, using our **strr** software package (Wachsmuth, 2021b), the code for which is available at <https://github.com/UPGo-McGill/strr>. With the Craigslist and Kijiji data we scraped, we cleaned the dataset using techniques such as string distance, duplicate removal, and outlier filtering, following similar approaches used with comparable datasets, such as Boeing and Waddell (2017) and RCLALQ (2020).

Image matching: We used our own image recognition algorithm to match listings posted to Airbnb or Vrbo. The algorithm uses “perceptual hashing” converts the sequence of pixels in an image into a string of numbers which serves as a distinctive “signature” of the image, similar to a fingerprint. We compare these signatures to each other to find pairs of image signatures which are extremely similar. All potential matches are then individually verified by human observation. The software package we developed to conduct this image matching is called **matchr** (Wachsmuth, 2021a) and is available at <https://github.com/UPGo-McGill/matchr>.

FREH modelling: We define “frequently rented entire-home listings” as entire-home STR listings which are available for a majority of the year (so 183 days or more in a 365-day period), and which are reserved at least 90 days of that year. This is a consistent and conservative way to estimate listings operated sufficiently often that they are unlikely to be their host’s principal residence. But this indicator is slow to adapt to sudden shocks in STR activity, since it incorporates the past 12 months of a listing’s activity. Given that the COVID-19 pandemic caused STR activity to drop dramatically, we wanted to capture the associated changes at shorter timescales than the one year which our FREH concept allows us to. So we developed a linear regression model which predicts FREH status based on three months of listing activity instead of a full year, and which is calibrated both to routine seasonal variation and to a given market’s specific dynamics. All of the FREH results reported here are the results of this model rather than the raw FREH calculations themselves.

Reproducibility: In order to facilitate public understanding and scrutiny of our work, complete methodological details, along with all the code used to produce this analysis, are freely available under an MIT license on the UPGo GitHub page at <https://github.com/UPGo-McGill/toronto-report-2023>.



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AUTHORSHIP AND FUNDING

This report was funded by the City of Toronto. The authors from the Urban Politics and Governance research group are exclusively responsible for all analysis, findings, and conclusions. Photographs are by Ken Lund (p. 1), Daniel Vorndran (p. 2), Padaguan (p. 4), Mindmatrix (p. 6), Bernard Spragg (p. 7), Martin St-Amant (p. 14), DiscoA340 (p. 15), A1 Federation (p. 22), Adam Moss (p. 23), patrick janicek (p. 27), Victoria Heath (p. 31), Enoch Leung (p. 32), Ryan (p. 38), AK-Bino (p. 39), Taxiarchos228 (p. 40), Mark (p. 41), Daniel MacDonald (p. 42), and Maksim Sokolov (p. 43), and are licensed under CC BY 2.0.

ABOUT UPGO

UPGo, the Urban Politics and Governance research group at McGill University, conducts rigorous, public-interest research into pressing urban governance problems—particularly those that exceed or challenge city boundaries. UPGo has published numerous peer-reviewed journal articles and policy reports on short-term rentals in cities in Canada and around the world, including “Short-term rentals in Canada: Uneven growth, uneven impacts” and “The high cost of short-term rentals in New York City”. UPGo is led by Prof. David Wachsmuth, the Canada Research Chair in Urban Governance at McGill University’s School of Urban Planning, and is online at upgo.lab.mcgill.ca.



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